

THE TIMES  
**Higher Education**  
SUPPLEMENT

### Staff 'redundant' pending inquiry

The academic staff at Pircroft College, Birmingham, have been made temporarily "redundant" in full pay while a Department of Education and Science inquiry is staged for the college's future.

Full time courses at the adult education college, the scene of serious student unrest this summer, have been postponed until the results of the inquiry, due to begin later this year, are known.

Meanwhile Mr Tony Corbitt, the college principal, and the four tutors have found themselves working at a college with no students. Plans to run short courses at Pircroft for the time being have not yet materialised and, if they do, could jeopardise the tutors' jobs.

Concern over the delay in resolving the Pircroft dispute, which began when students refused to recognise the principal and introduced their own academic programme, has been expressed by the Council for Academic Freedom and Democracy and the Trades Union Congress.

### Students oppose Gowon

by Sue Reid

General Yakubu Gowon, the deposed President of Nigeria, this week became an undergraduate at Warwick University amid rumblings from some student quarters over his arrival.

The general, who is reading politics and international studies, came to Britain after the bloodless coup two months ago. But his nine years in power were remembered for the war with the Biafra, who attempted to set up the state of Biafra, and this aspect of his leadership led to widespread controversy.

This week Mr Junior Odu, president of Warwick University's students' union, said that some individual students at the university had already called for the general's removal.

He was expecting a motion, condemning the university for extending an invitation to General Gowon to be put to the first students' union general meeting of the term this week.

### Rethink on FE college sought

Bedfordshire County Council is to ask the Government to reconsider its proposal to allocate 600 teacher training places in the new Bedford College of Higher Education and allow them to be split between Bedford and Luton.

The decision follows a meeting of the county council last week when Labour and Liberal councillors voted against the advice of the council's education chairman to send a letter to the Department of Education and Science before the education committee has considered the proposal.

The councillors were responding to fears that the new Luton College of Higher Education would be threatened if it could not retain some teacher training places when Putneybury College is merged with Luton College of Technology.

### New look quarterly changes its name

A leading magazine for academics, *Universities Quarterly*, is to change its name and content. *New Universities Quarterly*, published "cultures, education and society" will continue to be edited by Professor Boris Ford of Bristol University, and published by the Turnstile Press.

In an editorial in the autumn edition Professor Ford said that the revamped magazine would attempt to restore the "dialectical relationship" between academic expertise and learning on the one hand, and human concern on the other.

### New extra-mural centre

A new residential study centre has been set up by the Cambridge University Board of Extra-mural Studies. The centre, at Madingley Hall, Cambridge, will provide courses for adults and accommodate researchers.

### Latin at Liverpool

Liverpool University is to introduce a new honours degree in classical and medieval Latin near October.

### General Vacancies

## TUTOR — £5105 to £6855 Residential Training Establishment

The Electricity Council is the central co-ordinating body for the electricity supply industry which employs some 170,000 staff in a wide variety of technical, commercial, administrative and other work.

Applications are invited for this post, which is at senior level. The Council's Residential Centre for training is at East Hove, Sussex, about 25 miles from London.

Its part of the Education and Training Branch and provides a range of courses to meet the requirements of Electricity Boards, including management, executive development and specialist courses.

Further development of the residential central training provision is envisaged, and an additional post is to be filled to contribute to this work. Initially, the person appointed will work from Millbank, the Council's Headquarters, and be concerned with the review and further development of certain existing courses and the development of new courses for middle and senior management. When initial

development work is nearing completion, the location of the post will be transferred to the Centre itself in order that the occupant can make an increasing contribution to the tutorial work required by the courses which have been developed, while continuing to play a part in course design.

Candidates should have degree or equivalent professional qualifications, have had some experience at executive level in industry or commerce, and experience in the design of management and executive development training in industry or the educational sector, and in tutorial work at this level. Write in confidence, giving age, career to date and present salary quoting THES/113 by 24th October 1975.

Duncan Ross,  
Recruitment & Development Officer,  
Electricity Council,  
30 Millbank, London SW1P 4RD.

**ELECTRICITY COUNCIL**

## DIRECTOR OF STUDIES IN MANAGEMENT

(Personnel Organisation and Manpower) £8,650-£11,000

The Civil Service College provides a wide range of management and development training for civil servants. It is expected that when the existing courses in Sunningdale, London and Goldhurst are fully developed, up to 1,000 students will be in training at any one time.

The Director of Studies in Management will be based at Goldhurst in Sunningdale, but will spend some time at the other centres. The person appointed will be responsible, directly or through a deputy, for a range of subjects designed to develop in civil servants a rounded approach to the management of people in their work. The duties include the theory and practice of management, planning, allocation and control, industrial relations (including trade unionism), and other subjects. The Director will be responsible for the academic standards and performance of the teaching staff.

Candidates should normally have a degree in the field of management, social or behavioural sciences, and must have the ability to relate theoretical concepts to the practical needs of the Civil Service. Proven skills in teaching and the ability to foster them in others are essential. Experience at a senior level in the field of staff management is highly desirable.

The appointment is pensionable and will be for an initial period of 5 years with the possibility of extension. Salary will be in the scale shown above.

For further details and an application form (to be submitted by 31 October 1975) write to the Civil Service Commission, Alconbury Lane, Basingstoke, Hants RG21 1JB, or telephone Basingstoke (0256) 69551 (answering service operates outside office hours) or London 01-335 1922 (24 hour answering service). Please quote ref: E/9131/2.

Civil Service College

THE TIMES  
**Higher Education**  
SUPPLEMENT  
October 31, 1975. No. 210 Price 12p

## Poly director ordered staff to admit rejected student

by David Walker

A polytechnic director has instructed a head of department to accept a student who had previously been rejected so that "favourable relationships" with the polytechnic's local authorities were not jeopardised.

The order was given by Dr George Brown, director of North East London Polytechnic, to Mr Eric Beker, head of the social work, health and nursing department.

The student is an employee of the London Borough of Newham, one of the three local authorities which finance the polytechnic.

Staff in the department have complained to the Central Council for Education and Training in Social Work, the national validating body for the course. They say that admissions to the two-year social work training course are being interfered with "on political grounds".

The course, which was filled as long ago as June, attracted few applicants for every place but in a letter dated October 22 Dr Brown told Mr Beker that room had to be found for a employee of Newham education department.

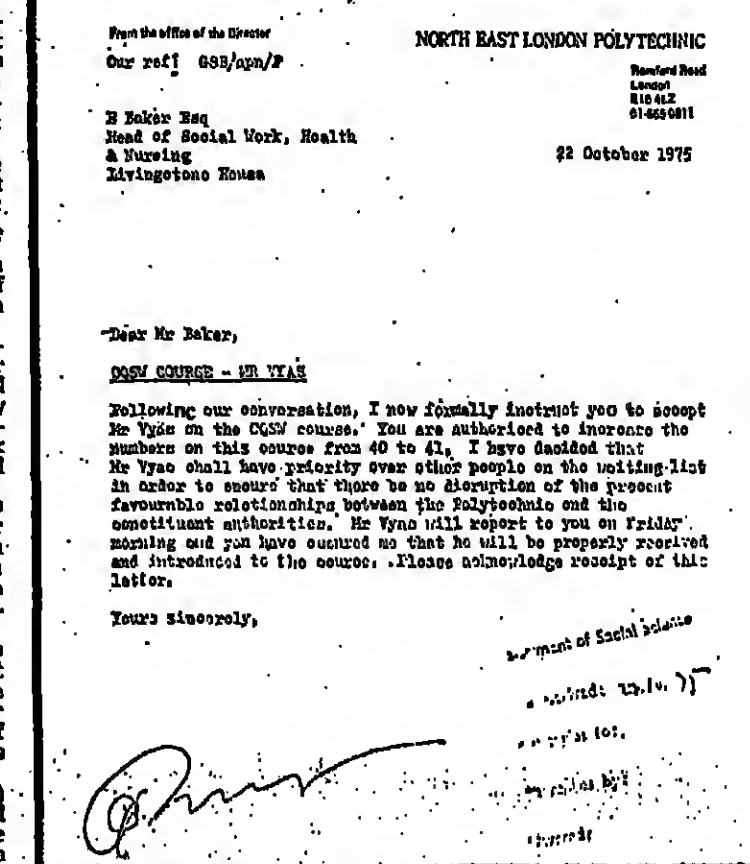
Dr Brown had warned members of the social work department earlier that failure to accommodate the local authority would endanger the polytechnic's income. Staff claim that a sum of £500,000 was said to be at stake.

In the letter (reproduced here) Dr Brown wrote: "I have decided that the candidate shall have priority over other people on the waiting list in order to ensure that there be no disruption of the present favourable relationships between the polytechnic and the constituent authorities."

Dr Brown's letter followed a series of meetings during September and October in which on one side it was made plain that the polytechnic owed Newham a favour and on the other that to admit an extra student irregularly to the course would entirely reduce its professional worth.

Mr James Palling, deputy director of education in Newham, said the education department, which had only in the past few months not financial approval to send its young members on courses, approached the polytechnic about accepting at first two and then one of its employees.

He added that since other certificates of qualification in social work



Letter that caused the uproar.

courses in the London area were full he hoped Newham's "special relationship" with the polytechnic could help. Mr Palling said Dr Brown greeted the request warmly and promised the education department a place on a training course.

Mr Palling went on: "I understood the fear of people in the polytechnic but this is not a harbinger of 'direction' by the local authority. It was a case of either we tried to help our younger employees. There was never any threat of money being cut off."

"We felt it was not unreasonable for an extra person to be added to a course with 40 members. Basically it was an attempt to work 'old man' and add one or two people in the polytechnic did not want to be old, pale."

After appeals by staff to the Association of Teachers to Technical Institutions and the British Association of Social Workers, matters came to a head this week when the nominees of Newham education department arrived at the polytechnic. He was told by staff they could not offer him tutorials or assess his work.

An official of the CCETSW said that to law if the admission rules laid down by the Privy Council were broken any registration that went through was invalid and the qualification could not be awarded.

Dr Brown decided to comment when reached by *THE TIMES*. Mr Dudley Gibson, the registrar, who formally handles admissions, referred all queries to him.

## College funds 'mishandled' inquiry told

from Sue Reid

BIRMINGHAM  
An investigation into the financing of Pircroft College, Birmingham, which closed earlier this year after student unrest, was urged at a public inquiry this week.

The inquiry, instituted by the Department of Education and Science, is examining the background to the conflict, said to have arisen over personality clashes and ideological differences between students, the principal and the governors, and possibilities for the college's future.

A tutor at Pircroft, Mr Trevor Blackwell, told the inquiry that there appeared to be prima facie evidence of "misappropriation" of public funds in the college's financing.

In written evidence he and other tutors alleged that the accounts were arranged to present a "less rosy" picture to the DES. The department, they claimed, had possibly not exercised enough financial supervision over the college, about 80 per cent of whose income comes from the DES. Further funds are provided by local education authorities and the Pircroft Trust, which controls the college finances.

Mr Blackwell showed the inquiry two letters which he claimed, backed up the tutors' suspicions. The first, from Mr Alfred Gregg, secretary of the Pircroft Trust, referred to a proposal from Mr Christopher Cadbury, chairman of the college governors, to charge a gift from another trust to the Pircroft Trust into a loan.

The letter said: "It seems to me whatever we do is a purely domestic matter and effects the college only in so far as we might wish to paint a less rosy picture than the account shows at the present time."

It suggested that if the gift were not changed to a loan, the DES might say "if you have no debt to pay off on the development, then you can do with £1,500 a year less grant."

The second letter, from Mr Cadbury to a firm of chartered accountants, said that "for various reasons it is desirable to show a loan of £5,000 as still outstanding from the Chadwick Trust to the Pircroft Trust."

Mr Blackwell said the letters, sent during September, 1970, came to light during the student occupation of the college in July.

At the inquiry Mr Cadbury claimed that the four tutors had set out to destroy the principal, Mr Tony Corfield.

"Criticism of the governors and trustees was quite permissible but it should be done through the proper channels. In this case offensive remarks by students were allowed to pass without rebuke," said Mr Cadbury. He expressed concern that none of the tutors giving evidence at the inquiry had supported the principal.

He was not questioned at the inquiry about the alleged "misappropriation" of funds.

A dispute over the £15 "occupation" fee awarded to each student by his local education authority was also highlighted.

Mr Bill Lawrence, president of the union, continued on page 36

### AUT to accept £6?

It was predicted this week that university teachers will accept a £6 a week cost-of-living increase. The matter is to be discussed by an emergency meeting of the AUT's council tomorrow.

Full story, page 36

### Contents

#### Sociology

Donald Macrae on "a major intellectual achievement of modern sociology" by Edward Shils, page 18

#### Philosophy

John Cruickshank on Copleston's history of philosophy, page 20

#### Psephology

Peter Wilby interviews David Butler, page 12

#### "Deceiving spirits"

Paul Johnson on the academic left, page 13  
Lord Crowther-Hunt, page 7

#### Views

George Steiner on talent and society, page 17  
Kenneth Minogue on free speech, page 5  
Peter Scott on Rhodes Boyson, page 12

#### Administration

Aloysius Graveyard, page 6  
Charles Carter, page 17

#### Linguistics

Five pages of reviews, pages 21-25

#### Microfilm

Leader, page 16

#### Don's diary

OU programmes	5
Noticeboard	8
Overseas news	14, 15
Letters	11, 16
Books	18-20
Classified Index	32



















**more letters page 16**



# The voice of the educational backlash

Peter Scott discusses the significance of the political and educational views of Dr Rhodes Boyson

With his mutton-chop side whiskers and his watch stuffed confidently into his waistcoat pocket, Dr Rhodes Boyson, comprehensive school headmaster turned Tory backbench member of Parliament, outburst for traditional standards and home of leftish progressives in education, seems a Victorian born out of his time.

This impression goes heavily to the superficial. He speaks in the confident accents of Lancashire, which for 80 years from the repeal of the Corn Laws to the Great Depression was a heartland of the other England, the north, and which if it could not challenge could at least occasionally ignore the dulling primacy of London.

Dr Boyson learnt his economics from Adam Smith not from Maynard Keynes, his social philosophy from the New Poor Law of 1834 not from the Beveridge Report, his view of law society works from Thomas Malthus, Jeremy Bentham, and perhaps Samuel Butler not from Karl Marx, William Morris, and the Wobbe, and his politics—well, there is a difficulty because he has his grandfather and father were members of the Tory whig Dr Boyson is securely ennobled as Conservative MP for Brent North.

Yet he is not an anachronism. At the Conservative Party conference in Blackpool in his native Lancashire earlier this month, his speech in the education debate was among the most impressive of the week—judged by the standards of political rhetoric.

The rank and file showed by their assiduous applause that he was their favourite. Indeed his reception appeared to overshadow that of the more aristocratic and more aristocratic front-bench spokesmen on education, Mr Norman St-John Stevas.

Nor does Dr Boyson's relevance rest only in his ability to appeal

to the political emotions of Tory backbenchers. The Conservative Party like its Labour rival is a heterogeneous coalition of aristocrats like Lord Home and those who have adopted aristocratic habits of right-wing intellectuals like Sir Keith Joseph, of businessmen like Peter Wainor (who incidentally are usually the most liberal), and finally of populists or Tory democrats of whom Dr Boyson is less than two years away from the House of Commons has established himself as a prominent and articulate leader.

All parts of the Conservative Party, with the possible exception of the aristocratic element, have become unhappy or at any rate uneasy about continued allegiance to Butskellism, that mish-mash of Keynesian economics and Beveridge social policy that has served as the dominant political philosophy in Britain for the last generation.

However they are unhappy for different reasons. The businessmen continue to support the two grand principles of high employment and the welfare state but fear that the economic and tax policies necessary to sustain them are undermining the profitability of wealth-generating private enterprise (a view with which some right-wing members of the Labour Party have considerable sympathy).

The right-wing intellectuals attack Butskellism with excessively theoretical and perhaps arid arguments—which is not difficult as this progressive consensus never enjoyed much theoretical credibility as an economic or social model.

Tory democrats like Dr Boyson attack this consensus because they believe that the concept for communal improvement has undermined the self-reliance and eroded the sense of individual responsibility in the citizen.

They favour the market as a distributive mechanism, not like Sir Keith for what appears to be almost metaphysical reasons, but because it seems to allow ordinary people greater control over the organization of their daily lives. To Sir Keith the market is an economic mechanism, to Dr Boyson it is a political and even a moral instrument.

Dr Boyson is the jermie of modern education, although he has managed to remain almost ebulliently cheerful. As a former headmaster and the present vice-chair-

man of the Conservative back-bench education committee, he does, of course, have a proprietorial interest in education as a political issue.

No television discussion in education is complete without the whiskered face of Dr Boyson, and every week he speaks at several meetings of parents protesting against the imposition of comprehensive schools or the slippage of educational standards. Last Monday a new book by Dr Boyson, *The Crisis in Education*, published with appropriate media fanfare.

However his commitment to education as a political issue cannot simply be explained by the proprietorial interest. His priority fits to well with his emerging philosophy of Tory democracy, because Dr Boyson sees education policy as the first battlefield between the plebeian guardians of the status and ordinary people who remain attached to traditional values of hard work, self-help, and individual choice (and responsibility).

So his book must be judged by its contribution to a serious consideration of education as a political problem, and as a polemic in the tradition of Tory populism.

Many of his comments are prejudiced and banal. On possible suppression of free speech within universities: "many of our 250,000 university students could find themselves attending indoctrinating sessions instead of learned lectures."

On truants: "a new sub-cultural class, worthy of the pen of Charles Dickens." On relevance in courses in higher education: "instant slogans, instant boredom and instant loss of scholarship and objective detachment."

Dr Boyson's solutions to these woes are similarly abrupt. Vouchers should be introduced which parents could use to "buy" an education in any school they liked, thus asserting a consumer's choice in education, with no hint of the immense practical difficulties that such a change would encounter.

Some universities and colleges should be closed, again with no apparent thought of the grotesque waste of former public investment in buildings for alternative use.

Apart from his off-the-cuff suggestions that the number of universities should be reduced, Dr Boyson makes four suggestions for

higher education. First, loans should replace grants for students because allowing students "a free ride in the perspective of their motivation" is a threat to academic standards and freedom (there are good arguments for loans but that is not one of them).

Second, there should be a gap between school and university before the student is allowed to choose his field of study. Third, staff and students should have to sign some kind of pledge of good behaviour or "loyalty oath" before being admitted, and fourthly, membership of student unions should be made voluntary.

There is something to be said for all these suggestions, with the exception of the third, but few people concerned with the future of higher education would place these four points at the top of a list of the most urgent priorities. That Dr Boyson does so is sufficient comment on the value of his contribution.

However as a polemic *The Crisis in Education* is much more significant. Britain has escaped the welfare backlash that was felt in parts of America in the late 1960s, but perhaps there is a parallel phenomenon in education.

The force of Dr Boyson's case is that there is considerable concern among parents about what is happening in schools (and in the community at large about what happened in parts of higher education).

They disliked the divisiveness of the 11-plus and the rigidity of examinations in the past, but they have not been convinced that the streamlined comprehensive school and teacher assessment were the right answer.

Dr Boyson and the other Black Pampheleters, aided, of course, by the privileged, have skillfully used these undercurrents of bewilderment as much as of discontent. Supporters of recent educational reforms, on the other hand, have neglected this task of popular persuasion and sometimes confused the genuine bewilderment with elitist reaction.

The best chapter in the book is that in which Dr Boyson attempts to describe the decline in general cultural standards and personal participation. To do so, he returns, appropriately, to the Rosendale valley in the Lancashire of the 1850s. He describes the intense personal



Dr Rhodes Boyson, M.P.

interest in politics, the proliferation of friendly and popular societies and the great popularity of country houses, and so on.

He compares this idyll with the poverty, the unemployment, and the ill-health that followed the war with our atomized society in which we live private rather than public lives, controlled by benign but anonymous authorities, our lives dictated by commercial values and our knowledge predicated by television.

Dr Boyson suggests that "compulsory state education has contributed to the cultural decline," as revealing that strong subterranean but nevertheless naïve belief that education can remake the world.

His nostalgia for Rosendale is of ordinary people, especially the members of Parliament who vote the money, time or taste for nostalgia. They were too busy making the future rather than much about destroying the values of the past.

Dr Boyson cannot really escape from the trouble and ambiguity of the 1970s back to the optimism and initiative of the nineteenth century.

*The Crisis in Education* by Rhodes Boyson, Woburn Press, £5.50 (paper), £15.95, ISBN 0 7130 01425.

# The destructive pressure of 'an incantation of deceiving spirits'

Paul Johnson discusses recent attacks on academic integrity from the student left and its supporters

In the final section of his *Leviathan*, Thomas Hobbes has some trenchant and apt observations on higher education, concluding: "For seeing the universities are the fountains of civil and moral doctrine, from whence the preachers and the gentry, drawing such water as they find, use to sprinkle the same upon the people, there ought certainly to be great care taken to have pure fountains from the venal of hostile politicians and from the incantation of deceiving spirits."

Whoever depraves our universities, poisons the wells of truth, and so sooner or later assaults the health of society as a whole. Hobbes was right to see them as the key. We have already dealt with the threat to them posed by those he calls "hostile politicians"; we now turn to the frontal attack on academic integrity mounted by the "deceiving spirits" of the student fascist left.

This terrible going-on at the Polytechnic of North London are now becoming widely known. "If you get a kick out of street lighting and agitation then you're certainly come to the right place"—the words with which the *Student's Handbook*, published at public expense, greeted the new intake of 2,000 adolescents this term, will not soon be forgotten, especially by working-class parents wondering whether or not to encourage their children to seek higher education.

The ogro-fascists of the National Union of Students have inflicted immense damage on the concept of the university in the minds of ordinary people, especially the members of Parliament who vote the money. The worst cases were Essex, Warwick and Lancaster; but what makes the PNL affair special and instructive is that it was a cynical, professional job right from the start.

The two men who organized it, Terry Povey and Mike Hill, both International Socialists, are expert college-smashers, who have been on the job for a long time.

PNL of course was an ill-judged amalgamation between an ill-judged and peaceful institution, and one where 18 members had been effectively in charge for some time. Indeed, they began to organize the assault on PNL even before it opened in 1971, Hill smugly predicting "the most serious disturbance the country has yet seen at a polytechnic."

Few people, even to universities, are aware that there is an extensive literature on how to destroy places of higher education, and the tradition of free speech there.

The NUS publishes a handbook on disruption and it is, for instance, its official policy since April 1974 "to take whatever measures are necessary, including the disruption of meetings, in order to prevent any members of racist or fascist organizations from speaking in lectures"; only with difficulty was it dissuaded from publishing a list of banned books, on the lines of the Index run by the old Roman Inquisition.

The Penguin *Student Power*, edited by Robin Blackburn and Alexander Burns, put the object of student activism openly: "to turn the tables on the system by using the universities and colleges as base areas from which to undermine its institutions of the social order."

No advanced capitalist state can afford to maintain a permanent police occupation of all colleges and universities, nor can it act like a Latin-American military thug and simply close down the universities, which after all are necessary in the long run to the productive process. So long as the universities and colleges provide some sort of education, which cannot be permanently polluted, they can become bases of revolutionary agitation and preparation.

The same volume provides a practical blueprint, "Campaigning on the Campus" written by Carl Davidson. The activists, he advises, should first capture the "internal media", including all meetings; then they should hold lectures, seminars, and so on, and delegitimize the authority of the institution; "union funds should be taken over for political purposes."

Next, they should begin "encroaching control" by gradually taking over direction of the forum, including all meetings, and staff appointments; they should persuade the teaching staff not to support the administration, or at least to remain neutral while it is attacked.

Finally, "criticize classes in the classroom, confront, class sizes, the educational system and corporate capitalism." Ultimately we have access to only one source of power within the knowledge factory. And that power lies in our potential ability to stop the universities from functioning, for limited periods of time.

It is significant that the "workers have, on

the whole, left Oxbridge alone, despite the fact that in their eyes it is the hard core of academic reaction. Instead, they aim at "soft" targets, institutions which are relatively newly established, and of low status, especially polytechnics and new universities.

Such places, in any case, have a much higher proportion of students on governing bodies, and even on academic boards, than older universities (which strictly forbid student-representatives being present when staff appointments, curricula and examinations are discussed).

Not that Povey and Hill were anxious to do anything so democratic as to get their policies adopted at the PNL by majority vote. On the contrary: whenever they found themselves outvoted at a governors' meeting or an academic board, they simply summoned their 50-strong roving mob, kept hands off outside, and took over by force.

The object of this kind of student activism is not merely to obtain physical control of a college but also to change the kind of "knowledge" taught in the "factory". Of course it is perfectly true that the content of higher education is to some extent subjectively determined. Hence the old Balliol jingle:

My name, Sir, is Benjamin Jovett.  
If it's knowledge, then I know it.  
I'm his Master of this College.  
What I don't know, isn't knowledge.

But the traditional subjectivism was that of the academic collectivity and it was under constant scrutiny and debate; it was also politically and socially neutral. What might be termed the "aggressive theory of knowledge" is rather different.

As one student leader at Essex put it: "Reaction is an ideological weapon which bourgeois academics are especially well armed"—and thus to be avoided. Or, as a student at Kent observed: "There is no one truth to which the university can educate us. We have to find our own version of the 'truth' for ourselves, and what may be true for one person may well be untrue for another."

Such a view, of course, makes the university itself superfluous, and indeed, once it has been taken over, it has only a small role to play in the future plans of the fascist left. For the moment, however, attention is focused on transforming what it teaches.

Steven Rose, professor of biology in the Open University, writes: "Scientists must understand and struggle against the ideological nature of science as an institution (its hierarchy—all power to the professors; its elitism—all power to the experts; its sexism—all power to the men; and its racism—all power to Western modes of thought)."

Another prime object is to destroy any examination system based on "conventional knowledge" and to replace it with "collective knowledge" (Collier, Collier, Macmillan 1971), edited by Michael F. D. Young, notes: "One can ... see ... research possibilities ... which might examine ... the process of negotiation between examiners and students about what counts as 'a sound answer'."

It is notable that the last two people I have quoted are themselves academics, and it is a chastening fact that the activists are steadily recruiting donnish supporters—one unpleasant feature of the PNL affair is the number of staff, some quite senior, who back student direct action tactics. Some don't express their sympathy simply by making it difficult to impose any control over disruptive elements.

John Griffith, the very civilized professor of public law at London School of Economics, and chairman of a group which campaigns for greater academic freedom writes: "I am doubtful whether any useful purpose is served by having a college-based disciplinary system of any kind ... a disciplinary code within colleges is a natural complement of absurd hierarchy and authoritarian structures which colleges operate."

This is merely well-meaning nonsense. The real ogro-fascists are less naive, or innocent. They see the campus as a political power-base.

One reason why the militants wish to smash the exam system is forward their aim of adding to the number of doofish supporters. For if the curriculum can be politicized, the extremists will grab the first-class honours and, in turn, the appointments (helped, of course, by student representatives on the academic board).

Some sociology students at the PNL admit frankly that their aim is "to create a Marxist cell"; that, they say, is "what they have come to college for."

Of course, most student activists belong to Marxist sub-groups like IS, but one should not underestimate the organizational thrust of the Communist Party itself. It sees the campus, along with the trade unions, as a much more



Robin Blackburn and Terry Povey: prominent personalities of the student left.



Shirley Williams and Margaret Thatcher, both former ministers responsible for higher education. The road to student revolution is paved with the good intentions of conservative-minded people anxious to be trendy.

politically-rewarding area than Parliament. The CP has a student officer, Joa Bloomfield, who organizes an annual week of courses on Marxist studies. This year's, held in July at the London University Students Union, attracted to less than 730 students (at £5 a head), who heard lectures from senior dons such as Professor Brian Simon of Leicester, Professor Rodney Hilton of Birmingham and Professor V. L. Allen of Leeds.

One of its objects was to extend Marxist perspectives on such subjects as art, design, literature and architecture, in addition to the traditional economics and politics. And the course, needless to say, included "revolutionary strategy and tactics."

Naturally, militantly political dons, who bring their views blatantly into their teaching, represent a serious threat to the university ideal. But they are not, as yet, either numerous or well organized enough to topple our system of higher education unaided. The danger, as even at the PNL (and elsewhere) have shown, is the indifference or cowardice of very large numbers of academics.

It is not always fair to blame them: one of the central tactics of the fascist left is to mount campaigns of virulent personal slander, in which the PNL (and elsewhere) have shown the indifference or cowardice of very large numbers of academics.

It is nearly every case the accusations they hurl are complete fabrications; but, as with the Goebbels "big lie", they are often believed, and a distinguished academic can have his reputation permanently besmirched in consequence.

Thus Walter Adams had the last years of his life completely poisoned by the LSE activists; and Terece Miller, who has put up a noble fight against the PNL slanders, is in similar danger. Such men as Miller, who will not compromise with student mobs, whatever the personal cost, are distressingly rare in British academia.

There are also many in higher education in politics, who drift with what they imagine to be the "progressive" tide simply because they do not wish to be classified—however mistakenly—as "anti-student."

Of course this was essentially a phenomenon of the sixties and early seventies and is much less common today; but in its time it did a good deal of structural damage, some of which, I feel, cannot easily be put right. What made the attack on the PNL comparatively simple was, first, the large student representation on boards and committees, and second the huge sums of public money they had at their disposal through the students' union.

Who, one might ask, made such things possible? The answer is surprising. It was the work of politicians usually referred to as "moderates" or "even right-wing." It was Shirley Williams, then minister in charge of higher education, who was responsible for the high percentage of students on the governing bodies of polytechnics.

As John Pratt and Tyrone Burgess say in

*Polytechnics: A Report*: "Under her influence local authorities had to revise and revise their submissions, especially the parts about students, which had to become more and more liberal as the months passed."

Another influential pro-revolution figure was the supposedly authoritarian Edward Short, a convert to the late-sixties fallacy that strict discipline is the chief cause of revolt. In 1965 he told a Commons committee investigating student unrest that the worst-hit colleges were always those "where the rules were excessive and students had not shared in making them."

Short and Mrs Williams allowed student representatives direct access to them, something normally denied to mere vice-chancellors. Indeed, on one occasion Mrs Williams entered into negotiations with the students of a polytechnic without even informing the local authority concerned, who only learnt of the meeting from the glowing student testimonies.

As for the public money lavished on the student unions to finance their disruption, it was discovered in the winter of 1970-71 that local education authorities were acting illegally in providing it. The minister, who generously stepped in to change the wording of the regulations, and so allow the L.E.A. to hand over the cash, was none other than Mrs Thatcher. The road to student revolution is paved with the good intentions of conservative-minded people anxious to be trendy.

Indeed, it is a curious fact that, by and large, the one group which has collectively stood up to student nonsense has been the non-academic staff—that is, the cleaners, caretakers, maintenance men, and so forth, the only working-class element in higher education.

In theory, the people whose cause the student militants claim to uphold.

At the PNL, the first and so far the only serious defeat inflicted on the International Socialists was on October 15, 1973, when the exasperated arms of toll forced the student union to call off its endless "occupation."

The student left is fully aware of this embarrassing weakness in their strategy and that is why the NUS, after a series of secret meetings, has drawn up a mutual offensive and defensive pact with the National Union of Public Employees, which includes most of the campus manual workers.

This is a significant, and in its own way a rather sinister development, for clearly student wreckers, acting in concert with non-academic staff, could bring almost any college to a standstill.

Nevertheless, it remains true that the academics, provided they stand together and stick to the moral and professional principles of their trade, have nothing to fear from any of the university's enemies, whether "reactionary politicians" or "deceiving spirits". What they need, however, is encouragement and guidance on a policy of common action, and this I will attempt to outline next week.

The third of our articles on "The University and its Enemies" next week: "Defending Culture in Danger."

# Getting the message through to the coal face

In 1954 the National Union of Mineworkers (Yorkshire Area) and the North-Eastern Division of the National Coal Board agreed to sponsor a three-year day-release course for coalminers at Sheffield University department of extramural studies. Now, 20 years on, the course has become established as a major educational influence among the coalminers of Yorkshire.

Many of the students attending the Sheffield day-release course were coalface workers, the heavy manual workers of the coal industry. In educational terms these men might be thought to represent the least promising material, having left school at 14 or 15 years of age, but the post-course achievement of these day-release students provides an unquestionable challenge to any such assumption.

In an industry with a strong tradition of trade unionism, the National Union of Mineworkers provides the most ready outlet for creative energies. The competition for union

office at branch level is strong. Regional elections held by pit-head ballot have a regular participation of more than 70 per cent, and in this field the Sheffield day-release students have had quite remarkable success.

Out of the total of 126 miners who responded to a survey that has been carried out by the university, no less than 52 (41 per cent) were involved in trade union work. Of this group, 17 ex-students (13.5 per cent) were active in the trade union when selected for day-release, and retained the same branch position after the course.

A further group of 16 students (12.5 per cent) moved to higher branch office, such as president, delegate or secretary, and 18 students (14 per cent) who were not active in union affairs when selected for day-release became active later, many being elected to the higher offices of the branch without previously having served at a lower level.

James MacFarlane discusses the success of a day-release course for Yorkshire miners

One student in this category has the remarkable achievement of becoming a branch secretary at three different colleges in the first one and then the second pit closed down.

No claim could be made that the Sheffield day-release course was entirely responsible for the high level of trade union commitment demonstrated in these figures, and no doubt many day-release applicants were already motivated to pursue trade union involvement.

Many of the students, however, in their reply to the survey, gave credit to the course for awakening interest and making them "more active" at their work. One student wrote:

"I thought you would be interested to know that the recent ballot of the pit resulted in me being elected delegate. No doubt attending the day-release course contributed a great deal to my success. I would be obliged if you would convey to all concerned in the department of extramural studies my thanks and appreciation for providing the opportunity for further study."

Not all the comment from ex-students was unqualified, and in a few cases day-release courses had raised expectations and caused frustration when those expectations were not realised.

One respondent had obviously tried hard to serve his local community but had finally given up the effort and turned to self-employment.

"Prior to my attendance at the day-release I was a contented man satisfied with his job. Since, I have been tormented with trying to do my small contribution towards the union and the Labour Party to such a degree as this last May I served my notice on the NCB ... perhaps with self-employment I can settle down."

Another critical comment came from an ex-student who had a very different viewpoint.

"The Sheffield course is basically a good one with the majority of students using their skills to assist the NUM and the working class. However, I so far as the course provides the first ladder into the middle-class via the full-time educational system, I disagree with it."

The "ladder" mentioned has been used by 22 of the students who replied to the survey. Those students went on to further full-time education at university or at the adult colleges such as Pirbright, Harlegh, Ruskin, and the Cooperative College at Loughborough.

Five of these students returned to work in the coal industry. Others have taken up a variety of jobs, three have gained degree qualifications in the social sciences and five are still at university.

Coal-industry management has also gained from the flow of day-release students, and staff jobs with the National Coal Board have provided a further outlet. Sixteen ex-students have taken advantage of the opportunity and taken posts as industrial relations officers, method study engineers and assistant managers for personnel at colliery level.

A further measure of the educational commitment and community involvement of day-release students is demonstrated by the numbers active in local government. Thirty-four ex-students (27 per cent) were active on parish, rural or urban district councils; and out of this

number twenty-three became active after day-release.

The evidence does not and could not provide any clear guide to the influence of day-release in the motivation of students to become active in the union and the Labour Party to such a degree as this last May I served my notice on the NCB ... perhaps with self-employment I can settle down."

Another critical comment came from an ex-student who had a very different viewpoint.

"The Sheffield course is basically a good one with the majority of students using their skills to assist the NUM and the working class. However, I so far as the course provides the first ladder into the middle-class via the full-time educational system, I disagree with it."

The "ladder" mentioned has been used by 22 of the students who replied to the survey. Those students went on to further full-time education at university or at the adult colleges such as Pirbright, Harlegh, Ruskin, and the Cooperative College at Loughborough.

Five of these students returned to work in the coal industry. Others have taken up a variety of jobs, three have gained degree qualifications in the social sciences and five are still at university.

Coal-industry management has also gained from the flow of day-release students, and staff jobs with the National Coal Board have provided a further outlet. Sixteen ex-students have taken advantage of the opportunity and taken posts as industrial relations officers, method study engineers and assistant managers for personnel at colliery level.

A further measure of the educational commitment and community involvement of day-release students is demonstrated by the numbers active in local government. Thirty-four ex-students (27 per cent) were active on parish, rural or urban district councils; and out of this





## AMERICAN HIGHER EDUCATION

# New York unveils 20% cutback package

from Thomas Cahill

**NEW YORK** Dr Robert Kibbee, chancellor of the City University of New York, has now formulated a series of proposals for reducing the scope of the university by 20 per cent and for lessening its dependence on revenues from the financially troubled city (THES, October 24).

Dr Kibbee has been under pressure from Mr Ewald Nyquist, the New York State Education Commissioner, to avert impending financial disaster by abandoning the university's tradition of free education in a city that has always had far more than its share of immigrant and migrant poor.

Pressure has also come from the fact that the university's budget has been cut repeatedly by the city in efforts to avert itself from default. Mayor Abe Beame has recently slashed the university's budget for the third time this year, and the cut is estimated as being between \$2m and \$4m.

This means that, since the mayor established his supposedly rock-bottom "authoritative" budget of \$663m for the university last December, he has had to cut it down by something close to \$140m. Now can there be any assurance that the last cut has been made?

More than this, each fresh cut means that additional sums are lost from the state under an scheme of matching grants. Thus, when the mayor last month cut an additional \$32m in city funds from the university's budget, the university actually lost \$54m because it became automatically ineligible for certain state grants.

The task of reducing university services in order to conserve reduced income is made doubly difficult by the huge and multiplying of the City University—20 separate institutions serving 275,000 students—and by the political repercussions attendant on the more obvious ways of reducing services.

To put an end, for example, to "open admissions"—the practice begun in 1969, of opening the university to all city high school graduates regardless of their academic records—would bring charges of racism and stiff opposition from New York's minority groups. To institute tuition charges would be to abrogate an essential ingredient in New York City's identity—its free access to higher education for the poor.

Dr Kibbee, revealing his new plan at a meeting of university administrators, said that the university's financial health had been dealt a series of "devastating blows".

## Inquiry into colleges' future 'should omit educationists'

A national commission, whose membership would include no educators or officials in charge of regulating education, should be appointed by President Ford to determine how and where American higher education should retreat in the face of its present economic crisis, according to Marvin A. Eggers, chancellor of Syracuse University.

Mr Eggers, speaking in Washington at the annual meeting of the American Council on Education, said that present trends in the financing of higher education and in the age distribution of the population pointed to a "thrive bomb" "licking away".

"We cannot even call attention to the ticking, other because we fear we will cause panic or be subject to ridicule," he said.

Mr Eggers said the academic community appeared to lack "reliable, objective judgment on how the higher-education complex can adjust to new conditions with minimum disaster. The judgment needed, he said, is by people who are very much but who are not directly involved in the outcome."

Thus, he said, a "National Commission on Higher Education" should concentrate on "striking radical new developments in the higher education."

## Axe for more PhD courses

Evolution of doctoral programmes in public and private universities by the New York State Education Department has moved into its second phase. The second purpose of this plan, project by a State body is to eliminate ineffective programmes and to cut back on the number of doctorate products. The chemistry programmes at Yeshiva and Adshimil universities and the chemistry and history programmes at St John's University, for example, are being closed with no new students being admitted.

Assessment has been completed in the fields of English, astronomy and physics, and conclusions will be announced shortly. Review of foreign language programmes has begun.

Academics are worried about the consequences of an unimpeachable evaluation on the employment prospects of redundant faculty. They view as inaccurate and misleading the public statement by New York State officials that the programme of evaluation was initiated four years ago by leaders in doctoral education who feared the oversupply of programmes in most disciplines would lead to enrolment shifts to weaker programmes because they were easier.

All the proposals will require the approval of the Board of Higher Education, except the loss which will require the passage of a new law by the State legislature.

At present, due to the matching grants system, the State pays \$1,710 less per student than the City University (CUNY) student than it does for students in the State University system (SUNY). Dr Kibbee would have the State allocate a certain amount for each CUNY student, independent of what the city might pay, and thus increase the overall CUNY contribution from \$290m to \$335m annually.

According to Dr Kibbee, the reduction in admissions would not compromise the principle of "open admissions". All city high school students would continue to be accepted—no longer as they applied by March 1 of their senior year.

The workload of the remaining faculty would be increased by up to 20 per cent, and their salaries would be increased by 10 per cent. Institutions have already been cut from 278 to 208, and additional cuts of 15 per cent are scheduled for February.

The CUNY faculty, whose ranks include some of the country's top scholars, and whose salaries are among the highest in their profession, are not receptive to Dr Kibbee's proposals. He has been accused by the Professional Staff Congress, the faculty's union, of attempting to reduce instruction at the City University of New York to grade-school level.

The commission would be forced to consider some "extraordinary measures" to ensure that quality was preserved while the extent of higher education was being reduced, Mr Eggers said.

He said such a step might be the establishment of an "academic resource bank" maintained as a public resource, that would support faculty members or other "academic resources" that institutions would be forced to discard because of economic problems.

"Why not provide a public facility to which academic resources could be assigned for maintenance at public expense when they become excess because of a reduction in enrolment available for higher education?" he asked.

The important point is that the surplus resources must be taken out of use without cost to the institution in which the surplus occurs. In this way the trauma and deterioration which often follow from straightforward dismissals would be avoided.

Mr Eggers said his proposals would permit higher education to "contract with style and dignity."

Chancellor of Higher Education.

## Columbia sells \$5m of land to stave off crisis

from our correspondent

**NEW YORK** Columbia University is putting \$5m of its property up for sale in an effort to improve its declining financial position. Columbia will also cease to fill certain administrative posts as they become vacant, and is currently considering more drastic remedies for future years.

The university faces a budget deficit of \$4m this year and much larger deficits in the years to come, due to the virtual exhaustion of its endowment funds. The deficit, which began in 1967, are largely the result of inflation and increased fuel costs.

The news comes as a shock to the American academic community which had expected the well-endowed institutions of the Ivy League to remain essentially untouched by the financial difficulties they have recently been plaguing other private, as well as public, institutions.

But, according to Dr William McGill, Columbia's president, most Ivy League schools and other large research institutions such as the University of Chicago, Stanford, Berkeley and Michigan—were faced with the same problem as Columbia. Dr McGill, who has just been

elected chairman of the American Council on Education, a nationwide body of 1,500 colleges and universities, said the Federal Government's financial plight at higher education.

Throughout the 1950s and 1960s, he said, colleges and universities were encouraged by the Government to expand dramatically and to create many new programmes. But now, he said, the Government has become a foe of fiscal irresponsibility.

"It is a bit irritating to me to be lectured on management economy in 1975 after having been lectured for two decades on the fact that the university was not doing enough," he said.

Columbia nevertheless intends to attempt a significant restructuring of its academic organisation in order to save money. But Dr McGill warned that the restructuring of Columbia is not going to solve our problems unless inflation is solved.

The property being offered for sale includes real estate adjacent to the Riverside campus and the Deafield estate in Riverdale.

## MIT switches on to Weil

The Massachusetts Institute of Technology, not normally noted for its interest in mystical asceticism, is devoting an unusual amount of time and publicity this year to the thought of Simone Weil, the Frenchwoman who died in 1943 at the age of 34 from self-induced malnutrition in hospital at Asinford, Kent.

Of particular interest to MIT is Weil's ability to embrace what seems to be the greater of polarities: science and belief. Moreover, she saw them in more than a simple linkage; she saw them as ultimately unitary," said a spokesman.

This semester MIT is offering a symposium for credit called "Simone Weil: live like her?" and a series of public symposia under the same title that will run through next spring and include speakers such as the psychiatrist



Simone Weil: polarities

Robert Coles and Dr Conor Cruise O'Brien, former vice-chancellor of the University of Ghana and now Irish Minister of Posts and Telegraphs.

## Major centre planned for humanities

Academics in the humanities, painfully aware that the natural and social sciences have stolen much of their thunder, are planning a national humanities centre, which they hope will help to reinvigorate the humanities.

A distinguished planning committee, set up by the American Academy of Arts and Sciences and including such names as Daniel Bell, John Searle and Lionel Trilling, wants the centre to "act as a focus for clarifying the functions, improving the quality and influencing the direction of humanistic studies in America today," according to Steven Marcus, professor of English at Columbia University and the proposed centre's director of planning.

In Dr Marcus's view these work in the humanities have experienced a sense of demoralization and loss of self-confidence and need a centre to serve them in the same way that the Brookhaven National Laboratory serves scientists and the Stanford Centre for Advanced Study in the Behavioural Sciences serves social scientists.

"Increasingly," says Dr Marcus, "the frontiers of social change are being set by technical innovation, scientific invention, while opportunities for human action are increasingly being provided in the light of the statistical findings and the behavioural assumptions of the social and cultural, rather than the humanistic, and of the humanistic, appears once again to be on the brink of extinction."

He and his colleagues are also worried about the "intentional" of anti-historicism," as Merleau-Ponty, professor of English at Harvard and the centre's chairman, calls it. "The deep structure of history is the unifying factor in human studies."

The centre will be interdisciplinary, will invite 40 to 50 scholars each year to annual fellows and require an annual budget of about \$15m. The university of Rochester, Pennsylvania, Michigan and Texas are under consideration as sites.

## Junta victim's post

Enrique Kirberg, who was released last month by the Chilean Junta after two years in prison, has been appointed professor in New York. Kirberg was formerly president of the Technical State University in Santiago, Chile's second largest university.

## Lit. crit. school

A national school of literary criticism, financed with a grant from the National Endowment for the Humanities, is to be established on the campus of the University of California at Irvine.

## Minority swapping

The graduate schools of arts and sciences of Harvard, Yale and Princeton are to exchange with one another the names of applicants from minority groups in an effort to increase the chances of minority students getting into them.

# Student grants bear brunt of pruning drive

by Günther Kloss

Following the announcement at the end of August of details of the proposed public expenditure cuts for this year 1976 (the THES, September 12) the Federal Government has now formally passed the draft 1976 budget. Total spending for 1976 will be some DM 13,000m (\$2,500m) lower than originally envisaged in the Government's four-year programme. Over DM 6,000m of this amount will be required by the Government's budget because it concerns expenditure fixed by law.

The impact of these cutbacks on the education sector is considerable. The effect will actually be larger because all the Länder, which provide the bulk of education expenditure, are also taking similar measures. It has, for example, just been announced that the teaching hospital at the new University of Regensburg in Bavaria will not now be built, and that any further expansion of the new universities of Passau and Bayreuth, which is due to admit its first batch of students in November, has been halted for the time being.

The Federal Ministry for Research and Technology, which has over the past few years had one of the highest annual growth rates—between 15 and 20 per cent—must in 1976 spend DM 158m or 3.9 per cent less than this year. As a consequence, the level of research expenditure originally envisaged for 1977 will now be reached only in 1978.

The bulk of the Ministry's expenditure is directed towards supporting research in institutions and industry, and the Minister plans to use some 150 of a total of 3,000 research projects. The cuts have been selective, in line with Government policy which favours applied research and emphasizes a close link with industry and the economy in general.

Research to improve the quality of the working environment and in the areas of medical technology and non-nuclear energy is hardly hit.

France

## Ministry fights to maintain control of teacher training

from George Morgan

A major row has flared over the perennial problem of teacher training. M René Heby, Minister of Education, and M Jean-Pierre Solon, Secretary of State for Universities, have both claimed responsibility for deciding the content and methods to be adopted in future teacher training courses. Along with university admissions, the formation of the Ministry is one of the few areas of direct concern to both departments—which were formerly part of the overall Ministry of National Education before being separated in May last year.

In what French education observers have called a "declaration of war" M Heby told a gathering of school inspectors that there was no question of handing teacher training over to the universities. Despite recent attempts to adopt a more vocational approach, he said, the universities "lacked experience in this field."

"As for the licences (bachelors) degree designed specially for future teachers, arrangements should be made between the Ministry and the universities governing the academic content of these courses. Final responsibility, however, should still lie with the central Ministry."

M Heby said that he was prepared to abandon the present system of teacher recruitment, the CAPES, and the aggregated method of recruiting teachers, and of four years of higher education, would be replaced by a competitive examination after the DEUG, the diploma in general studies which

but the Ministry has drastically pruned spending on nuclear research, where industry is thought to be capable of looking after its own interests, and on national, as opposed to international, space research.

This Bonn Ministry of Education, Arts and Sciences has been hit harder than any other Ministry by the Government's new policy; its estimates are DM 502m or 11.4 per cent down over those of the current year.

Forty-eight per cent of its budget goes towards student grants where the Federal Government contributes 65 per cent of total expenditures. Most savings are going to be achieved in this area. All postgraduate awards will from January 1, 1976, be given as interest-free loans, repayable over a 15-year period, beginning three years after completion of research. As payments will be at least DM 100 a month, linked to the level of later earnings.

Undergraduates, too, are to receive a higher percentage of their entitlement as loans—DM 130 a month for a student not living at home, instead of the present DM 80.

The loan element was introduced only a year ago after it had been abolished by the Education Grants Act of 1969. The Government's critics justifiably see their original fears confirmed as the loan element now amounts to 25 per cent of the full grant, which at present stands at DM 500 a month.

Thirty-five per cent of grammar school pupils and 45 per cent of students receive grants, and the range of pupils and students qualifying will remain unaltered. However, the major biennial review of these awards and of most of the allowances set against parents' gross income before parents can keep their children in the universities for more than a year will be postponed. Only the flat rate percentage allowance for parents and for each child has been modified so, as to favour families with several children.

A 10 per cent "herdship" increase of whatever grant a student receives will be paid from 1976 to every award holder to compensate for inflation.

NICE

This would give the Education Minister complete control over the content of courses in the teacher training centres which are to be set up as part of M Heby's global reform for primary and secondary education.

In response, M Solon said a press conference that the 1968 loi d'orientation gave total responsibility for teacher training to higher education. The Government had no intention of amending the law at this point.

In addition, M Solon pointed to an agreement signed by both parties earlier this year and approved by the Cabinet (THES, May 16), according to which the universities were to have control of the teacher training system. Academic subjects would continue to be taught by universities whereas the theory and practice of teaching would be handled by local authorities.

It is thought that M Heby has been trying to strengthen his bargaining position before final practical details of his report—already approved in outline by Parliament—are thrashed out later this year. Also, the Minister may have been hoping to pacify the school inspectors who have been restless about some aspects of the reform.

Hostile reactions to M Heby's statement have also come from students and union bodies. The National Association of French Students claims that his plan was not only illegal, it would also deprive science and art faculties of one of their main functions. An estimated 30 per cent of graduates in these disciplines go into teaching.

# Row over v-c breaks up university

by Paul Monrman

The 11-year-old three-campus University of Botswana, Lesotho and Swaziland came to an end last week when the Lesotho Government unilaterally declared the Roma campus in Lesotho the new National University of Lesotho.

The moves followed bitter disagreements between the Lesotho authorities and UBL's New Zealand vice-chancellor, Dr Cyril Rogers.

Matters came to a head last month when Lesotho threatened to make Dr Rogers a prohibited immigrant unless he renounced the new four-year contract he had signed with the university council.

Dr Rogers switched his headquarters to Swaziland whereupon Lesotho initiated court proceedings against him for allegedly removing university assets from the country illegally.

Both the council and Dr Rogers declined to fight the action and legislation to set up the new autonomous university was then set in train by the Lesotho Assembly. The Bill passed into law on October 20.

There were 1,200 students and 150 staff of whom about 60 were British, at the new university. Dr Rogers, at the new university, had been told that any who wish to leave may do so.

It is believed that the Lesotho Government, viewed with dis-



University of Botswana, Lesotho and Swaziland: end of a dream.

approval Dr Rogers' frequent trips abroad which, however successful they might have been in attracting foreign aid for UBL, earned him the reputation of being an "absentee vice-chancellor." In some quarters.

Nor was Lesotho pleased with the way in which he handled the devolution of courses in discussions on the university's plan. It was felt that he allowed the other two campuses for too many of the plums.

Dr Rogers' salary was paid by UBL and, as usual in such cases, supplemented by a contract from the United Nations Development Fund (UNDP), Canada, the United States, Denmark, Sweden and Holland.

Canada

## Universities urged to return to pursuit of excellence

from Edward Sheffield

**TORONTO** The universities should rededicate their role in terms of their traditional scholarship, and in views on matters of current concern. Special efforts should be made to inform the public of the case for higher education. These were the main themes of a symposium on higher education at York University, Toronto, earlier this month.

The symposium was held to honour Dr Murray Ross who was York's first president, and to prepare the way for a study of the university's future goals and objectives. Speakers were Mr Ian Macdonald, current president of York; Dr Claude Bissell, former president of the University of Toronto; Dr Reva Gergelin, a member of the Ontario Council on University Affairs; Dr John Macdonald, executive director of the Council of Ontario Universities; and Mr Walker Pirman, the recently appointed president of Ryerson Polytechnical Institute, also of Toronto.

Although he accepted the fact of the multiplicity with more than one clear-cut objective, Dr Bissell stressed that the university's special intellectual function was to preserve society's cultural traditions and to analyze and reassess them in order to understand what was happening today. He argued, too, that university research should be undertaken not only for discovery of the new but also for review, synthesis and exposition of what was known.

Admitting the difficulty of taking institutional stances on social issues, Dr Bissell pointed out that the universities had already done so—against discrimination in admission and staffing, for example, and in favour of freedom of speech and equality of opportunity.

Italy

## President faces housing protests

President Giovanni Leone was whistled and booed in Pisa last week by students protesting against the difficult conditions in which they have to study.

The incidents took place as the President visited Pisa to inaugurate a new 100m computer which will be linked up to the research institute of the higher Italian universities.

The students from local business and technical colleges, who are on strike in protest against the lack of lecture halls and their outdated syllabus, jeered as President Leone passed on the way from the airport.

The demonstration followed incidents at Pisa University earlier this month when students occupied an empty college building demanding that it be turned into a hostel. The university authorities, who had intended to house the mathematics department there, finally agreed.

This episode was a symptom of the difficulties facing students of Pisa, where there are only 150 hostel beds for a student population of 25,000.

India

## College heads call for growth halt

from A. S. Abraham

**BOMBAY** Vice-chancellors of Indian universities, meeting for a two-day conference in New Delhi, have proposed that there should be no further expansion of higher education, except in "backward pockets" of the country, that is, those where there are hardly any higher education facilities but where there is a substantial and growing demand for them.

At the same time, they have advocated the introduction of a large, non-formal higher education set-up over the next 25 years. This would include correspondence courses, study centres, evening classes and courses of an academic nature approximating to that of a degree and preparing students for specific professions and vocations.

The objective is to divide student enrolment in higher education more or less equally between the formal and non-formal systems by the turn of the century when the number of students is expected to increase to 8m from the present 4m.

The vice-chancellors felt that universities must, more than they do today, use their resources "to interact with the community". Specifically, they favoured the introduction of part-time vocational courses and the modification of undergraduate studies to provide for more fieldwork.

Spain

## Overspill campus opens

**MADRID** Madrid's overcrowded Complutense University has opened its new campus in the town of Alcala de Henares, 20 miles from the city.

Sections of the departments of biology, chemistry, medicine, physics and economics have moved there. At the moment, 1,170 students attend classes on the new campus. They travel daily from Madrid, using special railway vouchers.

The Complutense University, Madrid's original university, has an estimated 125,000 students this year, although it can only officially cater for about 100,000.





HIGHER EDUCATION SUPPLEMENT  
New Printing House Square, London WC1X 8EZ. Telephone 01-837 1234

## An echo for excellence

Dr George Steiner, in his eloquent plea to rescue cultural excellence from the claws of the "social levelers" (opposite page) is echoing in his own way both the fears of Dr Rhodes Boyson—that disrespect for the traditional values is leading to educational and political anarchy (page 16)—and the hopes of Archbishop Coggan that man can rise himself above material gain and work for the common good.

Dr Steiner is careful not to be misled by the illusory phantoms of ideological debate. The ideal of academic excellence is not merely to be deplored. It represents, in his eyes, the formula for the economic and cultural suicide of modern man, cutting him off both from the wells of scientific invention on which Britain depends for its economic existence, and from the highest expressions of man's nobility that are to be found in the fearless pursuit of scientific truth.

Yet to claim, as Dr Steiner does, that it is not only, in his view, but also noble to "find the truth" is more interesting than social justice—often though it may contradict it—is to tread a difficult, and more dangerous path. For it demands an

allegiance to the "objectivity" of the scientific method which is now being questioned, not merely by those philosophers of science keen to restore the subjective and ideological dimensions that exist through factors such as the choice between competing explanations of phenomena but by all those who experience existing patterns of social organization and control through the alienation and control which a scientifically planned and managed society, or, as Dr Steiner would have it, a "cultural life," which Dr Steiner rightly deplores, need not necessarily be seen as the product of egalitarian social policies. It can equally be seen as a symptom of the inadequacies of these policies as a viable alternative to the unequal distribution of wealth and opportunity for which they have been offered as a substitute.

The idea that the two qualities are the same is a dangerous illusion. As part of it, any society which seeks a humane existence for its members inherits a responsibility to maintain the quality of its culture. Yet to place culture above the demands for social justice is one of the first steps on the path to totalitarianism—whether of the left or of the right.

## Diplomas in discrimination

The wide discrepancies in admissions to diploma of higher education courses this year, in spite of big advertising campaigns, are a remarkable demonstration of students' discrimination. It cannot be a coincidence that four of the five most popular courses (excluding the 180 students admitted to Crews and Alsager College of Higher Education as part of a bachelor of education degree) are at North East London Polytechnic, Bedford College, Gwent College of Higher Education and Wolverhampton Polytechnic.

All these colleges offer distinct programmes with either a wide variety of options or flexible entry requirements, or, in the special case of N.E.L.P., a distinct philosophy of independent study. The colleges which failed to attract sufficient numbers of students appear to be hardly distinguishable from conventional degrees or to offer any other attraction to a two-A level entrant.

Portsmouth Polytechnic's diploma, linked to a modular bachelor of science degree, failed to attract a single student. Bournemouth College of Higher Education, in its second year of recruitment, attracted a disappointing total of 14 students. Other entrants may have been deterred by the college's failure, so far, to get approval for an arts degree course.

All the evidence suggests that

students are sceptical of the diploma as a qualification in its own right. They are attracted by the flexible choices offered by some colleges but, if the degree offers the same choice, as at Portsmouth, they prefer the degree.

This year's recruitment figures suggest, however, that there is a market for the diploma among students (and particularly mature students) who do not have two A levels and see it as an opportunity to prove that they are capable of degree-level work.

If it is right to have exceptions, but plainly ridiculous for the exceptions to exceed the rules. The notable two-A-level entry, which has a status symbol, may well be determined by the unknown future of the diploma, but the current situation could benefit from the course. The minimum entry qualification should, therefore, be abandoned. To preserve it, even as a "flexible" guide, is both misleading and restrictive.

## The slow march of microfilm

It is how almost 50 years since microphotography was originated and nearly 300 years since miniature writing was evolved but the traditional forms of publishing have not yet been vanquished. Acceptance of microfilm in the academic community is still proceeding slowly.

It is difficult at present to see clearly whether this slow development is due to a failure to take account of human factors such as strong resistance to the possible displacement of the printed book by microfilm or to poor standards in the manufacture of film and the microfilming of texts and the development of reading equipment.

Another aspect which might be responsible for its slow acceptance is the lack of attention that manufacturers themselves have paid to the educational community, which they have considered to be lacking in economic viability. It is perhaps time that they looked again.

The educational community, too, should clearly revise its opinion and look again at such advantages as space saving, reduction of binding costs, preservation, and access.

copying, micropublishing to make available multiple copies of collections otherwise unavailable in continuous ravelon of data bases through computer generated microforms and the comparative inexpensiveness of dissemination offered by the use of microfilm.

Signs that the future of microfilm is by no means bleak are that traditional publishers are increasingly entering micropublishing—perhaps as an insurance against the unknown future—and producing unique collections of material or, for example, the combination of conventional and micropublishing techniques to produce completely new information packages such as the synoptic journal.

On the other hand research projects at present in hand show that a great deal of serious consideration is being given to the design of equipment and the development of standards which will make microfilm technology more acceptable.

Yet perhaps the greatest ally of microfilm is the prohibitive cost of paper which is in the end much more likely than any other medium to enable microfilm to make a major dent into conservative funding.

## LETTERS TO THE EDITOR

### Grants injustice

from Mr D. A. Schofield

Sir,—I imagine that many members of university academic and administrative staffs who have to deal with individual students and their problems would share my view that the greatest financial difficulties are faced by those students whose grant assessments call for parental contributions to a greater or lesser extent.

Frequently cases arise when parents—for good reasons and bad—fail to contribute enough to bring a student's income up to the level of a full grant, and occasionally one comes across cases where parents make no contribution at all because they do not want their son or daughter to go to university in the first place.

The law decrees that a young person is legally adult at 18 years of age and, consequently, that he can decide for himself whether to accept the offer of the grant system, rather than on their more headlined-seeking efforts related to the level of the maximum grant, then I suspect that there would be rather less real poverty among students than there is today.

If the organizations representing students had concentrated on this aspect of the grant system, rather than on their more headlined-seeking efforts related to the level of the maximum grant, then I suspect that there would be rather less real poverty among students than there is today.

Yours faithfully,  
D. A. SCHOFIELD,  
Academic Registrar,  
Southampton University.

### Launceston legality

from Professor J. A. Griffith  
Sir,—Just assembled on this third morning of a hearing, counsel for the university, in response to no question and on no pretext, tells the authority of the vice-chancellor, that if they find for the students, the university (here I adopt the vice-chancellor's version) reserves its position on whether to institute new proceedings before a different tribunal.

The statement was totally uncalled for, both literally and in the sense of its being improper. It was prejudicial, out of place, and ought never to have been made. When I accuse the vice-chancellor of saying that he is proceeding to be instituted, to say that he "never said, thought or believed any such thing."

Why, then, did he authorize the making of the statement? Yours faithfully,  
J. A. GRIFFITH,  
Professor of Law,  
London School of Economics.

Editor's note: Mr Carter said this week: "Professor Griffith's criticism would appear to be more properly directed at counsel's conduct than at the university. This correspondence is now closed."

### Dr Murray

from Royan Gil  
Sir,—So, to Professor Murray, according to Peter Wilby (THE TIMES, 24 October), "ambled along" the principal of the third women's college in Cambridge but doing "little revolutionary or original," and making "New Hall" a monument to her managerial abilities.

I was one of the first 16 undergraduates at New Hall when it opened in 1954. Eighteen-year-old girls, most of them fresh from school, were suddenly thrust into a blaze of publicity. We met news-reporters, gave television interviews, accepted invitations from the rich undergraduates who thought it fun to invite an entire women's college to sherry, and signed when some Poppy-Day poster asked a single sign outside our front door: "Reading Department."

Looking back on this year, I am amazed to think how little difference it made to the rest of my life. I do not think any of us got drunk on the excitement—although, certainly, we enjoyed it and the next two years were not the hangover they could so easily have been. For this we have to thank Dr Murray.

The opening of a new women's college, in a Cambridge where the ratio of men to women was 12:1, was revolutionary enough; a principal with even more revolutionary ideas would have been a disaster. The influence of someone with, as Dr Murray has it, "a sense of her own convictions, when to encourage, when to tolerate, and when to forbid." This we had, in Dr Murray.

Whilst the national economy is in its present parlous condition one cannot realistically expect the means test on parents to be abolished, but surely it should not be beyond the wit of man to design a more humane arrangement than the present.

Has, for example, there been any consideration of paying full grants to all undergraduates eligible to receive support from public funds, and then treating the grant as part of the parents' income for tax purposes?

This would surely be a better system than the present ludicrous arrangement of the State—through local education authorities—paying students grants on a sliding scale based on nothing more than the pious hope that parents will voluntarily pay their share of the assessment.

If the organizations representing students had concentrated on this aspect of the grant system, rather than on their more headlined-seeking efforts related to the level of the maximum grant, then I suspect that there would be rather less real poverty among students than there is today.

Yours faithfully,  
D. A. SCHOFIELD,  
Academic Registrar,  
Southampton University.

### Keel unit

from Mr R. R. Bytham  
Sir,—A spokesman for the University of Keele is quoted (THE TIMES, 17 October) as stating that, as acting director of the Centre for Social Science Research, "was a party to an original decision in December, 1974, which led to the closure of the Centre."

The actual original decision and the critical one was that of the expenditure review committee which decided to recommend that the vacant posts in the Centre. I only learnt that this committee was to consider this matter after the decision was taken. I still have to knowledge of what arguments in favour of making appointments, if any, were presented to that meeting.

Since three of the four posts were then vacant the management committee decided it had no option but to recommend the closure of the Centre. As a member of this committee, I strongly disputed this, favouring the retention of the Centre, and the closure of the Centre was a final decision.

Social sciences survey research has been dealt two severe blows by the SSCRC. Although the Centre is now closed and dispersed, it is not too late for the SSCRC to take account of the Keel's experience and devise some means of retaining their survey unit.

There is an enormous amount of survey-based research being carried out not only by universities and the SSCRC but also by local authorities and numerous national organizations. This is labour-intensive work, requiring large sums of money. Mistakes can be disastrously expensive.

It is critical that there are centres of expertise in survey methodology and that these are managed by committees composed of people who recognize that such pieces should be the last to be subjected to economy cuts and not the first. Unless the SSCRC succeeds in reviving or replacing the survey unit within the coming year, there will, in October, 1976, be no such centres in Britain outside central government.

W. R. BYTHAM,  
University College  
Bristol.

### NATFHE

from Mr A. J. Pointon

Sir,—One must assume that David Farnham's article on NATFHE (THE TIMES, 24) was dictated more by his affiliation than by any objectivity. Two points will suffice.

First, as the conclusion of his article, he classifies the new organization NATFHE as a union for professional staff. He cannot be unaware of the CLEA/ATTI conditions of service document which has been typified by one education correspondent as the "skiver's charter".

In a further education/higher education institution at least, there are teachers facing redundancy because staff who have passed the L1/SL bar are, without additional duties, claiming the right to do no hours lectures less per week so that complete courses may have to be closed down.

Second, Mr Farnham's claim that the viability of APT is threatened by the size of the new NATFHE suggests that his view of the functions of a union is based on something other than the service which the teachers have to perform.

Yours faithfully,  
A. J. POINTON,  
Assistant National Secretary,  
Association of Polytechnic  
Teachers,  
Southampton,  
Hampshire.

Smart promotion  
from Dr Maryon Hiskett  
Sir,—What, with the moratorium and all that, I had almost given up hope of promotion. But reading Robinson on incompetence (THE TIMES, 24 October) has filled me with renewed hope.

For, if only one is pardoned enough to recognize the slight of things to come, and smart enough to get in on it, then, if not readerships and professorships, at least laureatorships seem certain.

Yours sincerely,  
MARYON HISKETT,  
Wrotham Road,  
Moorham,  
Kent.

### Books and students

from Mr Maryon Hiskett  
Sir,—Your readers may like to know that the National Book League still has available a limited number of copies of *Books and Students*, which was mentioned in Roy Shaw's letter (THE TIMES, 17 October).

They can be obtained by sending a stamped, addressed envelope (6in x 9in) to the publicity officer at the NBL.

Yours faithfully,  
MARTYN GOFF,  
Director,  
The National Book League,  
7 Albemarle Street,  
London.

### Chartres puzzle

from Dr André Linde  
Sir,—This reference to the Academy and Communism (THE TIMES, 24 October), Shannan's constant reference to the "École des Chartres" (sic) has probably puzzled many of his readers. In fact, the study of paleontology and palaeogeography is the preserve of the "École des Chartres".

To err is human but it would be well worth your while to rectify the "coquille" the learned professor has made. I am sure, unwittingly, Yours sincerely,  
ANDRÉ LINDE,  
Research Fellow,  
North East London Polytechnic.

Sir Geoffrey Howe's warning that Britain is facing a "fame-drain", the recent conference on the proper treatment of exceptionally gifted children, and Sir Bernard Lovell's address to the British Association on the social responsibility of the scientist, do, between them, raise some crucial questions about the current relations of talent and society.

Despite philosophical speculations which go back at least as far as Plato and psychology and sociological studies already begun in the eighteenth century, we know very little about the genesis of exceptional talents and creative gifts in the individual.

There are great dynasties and family-clusters of eminence, in which successive generations seem to produce utterly exceptional individuals, often of a very different cast (the Huxley connection in this country is one of the most famous and closely studied), in other cases, however, paternal gifts and intermarriage with excellence seem to engender no further distinction and will, in fact, often stifle mediocrity and even outright failure.

The evidence is so intricate and contradictory that no theory of social vantage or disadvantage or ideological character. The romantic model has it that poverty, hardship, the hostility of the environment positively foster genius though they may crush talent. Genius fulfils itself by overcoming impossible odds.

Opposing the romantic theory is the liberal-rational conviction that an immense mass of human potential has, indeed, been crushed by the perennial injustice of economic and social circumstance. It is not only the country churchyard that we find so many "mute inglorious Miltons" but in the city slum, on the factory floor and even in the bourgeois semi-detached house, the philistine, repressive ideals of capitalism have prevented the spontaneous development of a personal vision.

The radical theorist points out, and surely he is entirely right, that great traditions of popular art, of oral literature, of folk-music have vanished all but completely simply because they did not fit the mould of the sectioned or recorded by the ruling culture. Tolstoy was, in his later years, absolutely persuaded that there were men fully equal to Plato or Shakespeare living, speaking, dreaming among the great hosts of the humble and the oppressed. And Chaucer, too, he thought, came from the folk.

But again, the argument defies anything like rigorous substantiation or, what is equally important, refutation. Where a Milton has been mute or a Plato illiterate, where lack of a piece of chalk has kept a Giotto from trying his hand on a bit of slate, we simply have nothing to go by—either way. Hence the circularity, and also the personal acrimony of the

debate now raging on the relative role of heredity and of environment in regard to IQ and to talent.

But the worry is this: while the facts are intractably complex and no adequate theory has been provided, politics and the brutal contingencies of economic crisis are deciding the issue for us. With certain paradoxical exceptions, which I will cite in a moment, the post-war climate in the industrially developed world has been one of more or less conscious and vengeful levelling.

In part, this stems from the overwhelming phenomenon of "Americanization" from the top down, throughout the western community, of American criteria of egalitarianism, populism and anti-intellectualism. In part, it derives from a profound malaise before the undeniable fact that the old high cultures, the traditional high literatures, particularly in European civilization, had proved barren in the face of modernity, of the two World Wars and totalitarian barbarism.

This malaise and the penitential doubts which came with it particularly affected the very men and women—artists, thinkers, teachers, publicists—who would, by definition, have been the custodians of excellence. But whatever the components of social vantage or disadvantage, of egalitarianism or non-consumption materialism, the result is plain: whether in the deliberate enfeeblement of the American school-system for the sake of racial equality or in the current British policies over direct grant schools and the standardization of university admission, the aim is urgently egalitarian.

Sir Geoffrey Howe speaks of a "fame-drain" when he means the perfectly understandable withdrawal to foreign tax-havens of a handful of literary or pop superstars. Now the blow to the Eschschere may, as he says, be severe. But with all due respect, the damage caused by a further cutting down of the Open University, by a further diminution in the cultural services of BBC radio and television, by a restriction of theatrical and musical activity in London and throughout Britain, would be much more drastic.

Already, intellectual and artistic life in this country is grayer than it was. Every day some "intellectual luxury"—and that is precisely what intellectual and imaginative life is, a luxury we cannot do without—every day some vital life-sustaining luxury is being perished away.

Could it be that the cheerful philistinism which now animates public policies towards education and the arts is, in fact, economically self-defeating? It is doubtful whether Britain can, or should want to, replace a place at the top of the technological march. To become the Japan or the West Germany of the 1980s is a dubious ideal.

On the contrary. It is, in any aspect, by its wits that Britain will have to survive and prosper; by its sciences, by its ability to provide a unique climate of tolerance and plural

ity for individual experiment and talent (much of which is only too ready to find a haven here, coming from all over the world), by the preservation of the intellectual and morally complex equilibrium of representative government—a preservation which demands every available bit of creative insight, articulacy, and, dare one say it, personal charisma.

To many an outsider there is something almost suicidal about those current policies against diversity and excellence which would level the community to a most common denominator. Not merely because such policies are based on the crudest of utilitarian or punitive impulses, but because they threaten to erode precisely those assets, those unique potentials on which the future of this society may well depend.

That western democracies should be leveling downwards exactly at the time when the hunt for and intensely selective use of individual gifts in the Soviet Union and the Soviet bloc is reaching Platonian intensities is an irony over which futura historians will ponder.

But the question raised by Sir Bernard Lovell of the British Association moaning a few weeks ago goes well beyond the muddy mire of our present economic-political crisis. Roughly summarized, Sir Bernard expressed the conviction that the whole notion of pure science, of absolute scientific research, may have to be rethought in the light of the contemporary social condition.

Now, as he himself said, Sir Bernard is only adding his voice to a movement of worry and criticism which has been gaining volume throughout the scientific community and the public at large. The worry goes back at least as far as the contrivance of the atom bomb, but it has grown far more acute with recent developments in molecular biology.

The financial side is obvious enough: ought millions of pounds or millions of dollars be expended on such fantastically costly but also totally abstract pursuits as the study of fundamental particles in high energy physics—at a time when there is not enough money for medical care at home, let alone in the third world?

Tia ethical and pragmatic uncertainties are also obvious. Should what is called "genetic engineering", for example, be allowed to reach a point at which interference with the genetic mechanism of the creation of "living forms" in vitro in the laboratory pose political and social quandaries, and provocations to abuse which the human mind or the human conscience may well be unable to cope with?

Now, the implicit plea for a "slowing down", indeed, for a stoppage of certain lines of research and for a stricter regulation of public control over the laboratory has

obvious force and appeal. But here also, we must, I think, be very careful. The line between pure and applied science, between what seems extravagantly remote and what looks to be immediately useful and beneficial is fluid and very often a matter of wrong guesses.

But there is a more careful consideration. For reasons which we really don't understand—and I want to try and say something about this—reasons that they be connected to nutrition, to climate, to sheer genetic good luck, western man has since roughly the sixth century BC and that great explosion of intellect in Greece and Asia Minor, been a relentless hunter after rational truth. Like no other, the western tradition of cerebral passion has been one of disinterested, speculative pursuit, of asking radical questions and pursuing answers wherever they may lead.

Other major civilizations have generated great philosophic systems, world religions, they have developed art and music, architecture and languages of unrivalled complexity. But they have not generated this abstract-scientific passion and continuity, and of course, they may well be the more tranquil, even the more happy, for it. We in the West, however, seem to be programmed to come deep level to keep opening doors to the obscurity or menace which lies behind them.

In fact, one suspects that neither public inquisition nor lack of funds, neither public spirit nor a genuine apprehension of what may prove uncontrollable in the unknown, will keep someone, somewhere in our community, from going after the answers whatever the cost. Now, undeniably, this represents a predatory, possibly a destructive and even self-destructive addition. But it is also our eminent dignity and ought not to be abandoned with for doctrinaire or utilitarian ends.

I think we can say at this point in this dark and rather barbaric century that human beings are an great achievement for God. This capacity to risk extreme danger for the sake of the disinterested hunt after knowledge, the intuition that the truth is far more interesting than social justice (and, what is more worrying, that the truth may even be contradictory to it) are about the nearest thing we have left of nobility.

The relations between talent and society have always been uncomfortable and ambivalent. The current economic mess and egalitarian impulse do no more than make this discomfort sharper and that subversion more necessary.

The author is professor of English and comparative literature at the University of Geneva. This article is an edited version of a talk given on BBC Radio 3.

George Steiner

## University economies: easier said than done

"Significant economies of scale are evident in applied biology even though no deliberate attempts have been made to find them. An 88 per cent increase to student numbers can be accommodated with a 44 per cent increase in the total cost of course."

The quotation is from a very interesting new book on *University Expansion and Finance* by Michael Pickford; he is talking about no prizes for guessing this—the University of Bradford. A series of papers from Professor Bottomley and his colleagues at that university here set out the case for the idea that vast economies, unaccompanied by harmful effects, are possible in the operation of universities.

To his credit, Dr Pickford does point out some enigma; but, careful and well-written as his book is, it still leaves an impression that we ought to be able to recognize the slight of things to come, and smart enough to get in on it, then, if not readerships and professorships, at least laureatorships seem certain.

Yours sincerely,  
MARTYN GOFF,  
Director,  
The National Book League,  
7 Albemarle Street,  
London.

Chartres puzzle  
from Dr André Linde  
Sir,—This reference to the Academy and Communism (THE TIMES, 24 October), Shannan's constant reference to the "École des Chartres" (sic) has probably puzzled many of his readers. In fact, the study of paleontology and palaeogeography is the preserve of the "École des Chartres".

To err is human but it would be well worth your while to rectify the "coquille" the learned professor has made. I am sure, unwittingly, Yours sincerely,  
ANDRÉ LINDE,  
Research Fellow,  
North East London Polytechnic.

over-stuffed department cannot reduce its over-staffing until someone chooses to retire or leave, and that may mean waiting for a decade.

But let us forget about outside incentives, and suppose that the inner urge to save resources will suffice. I have not inquired whether the University of Bradford will in fact have a decline in real costs during this quinquennium of between 19 per cent and 30 per cent (see Pickford, pages 101-5) but it would guess not, despite the advantages of having Professor Bottomley at hand to guide our advice.

And that university will need to make no excuses. For the student numbers which have emerged in the present quinquennium are likely to have been very different from those assumed when it began.

Most of us will have distributed resources in 1972 and 1973—for instance, to departments of chemistry and physics—when the hard facts of 1975 show not to be in any immediate demand. Unfortunately there is no alchemy for transmuting redundant chemicals into accountants.

This suggests a rather fundamental error in the method of thinking implied by Dr Pickford's book. It assumes a period of realistic planning which is long enough to allow a shift of proportions of some of the resources with a slow turnover, such as tenured staff.

There is another difficulty. Nearly all the economies which Dr Pickford indicates require for their achievement a sufficient expansion of the economy of the university. The balance of factors can be improved by additions, without seeking anybody—and also a political fact; Professor X can be ejected into economy if his empire, nevertheless, is constantly growing but he will certainly not be ejected if it is not.

Suppose that one has a university system with static student numbers overall, but shifts between subjects which are substantial and not necessarily for more than three years ahead. This is not a uniquely unworkable situation; plenty of manufacturers rely on a market which shifts much overall growth, but subject to unforeseeable changes of brand preference.

To survive and prosper, one needs a four-part policy:

(a) Maximize the flexibility of your resources.  
In the university context, have (for instance) more non-tenured staff; look for people with broad qualifications; consider re-training schemes; move secretaries, technicians, etc. to the places where they are most needed, and do not let them become departmental serfs.

(b) Where resources are specific, consider how you can attract customers who will use them.  
This suggests many delightful ideas, such as giving a cash bonus (or a free ticket to Moscow) to anyone who will come and learn Russian. At the very least, much more differential advertising of courses could be justified.

(c) Kill off brands whose future looks hopeless, or sell the rights to a better-placed competitor.  
But that suggests economies which are not even desirable. It will not do to let the map of knowledge be torn under by ill-judged and temporary shifts of student preferences, or to ignore the value to a university of the interpretations of fields of knowledge. Yet might it occasionally be worthwhile having a mobility allowance, or, worse, to graduate Professor Y from his three staff and two students somewhere else, where his qualities could be more efficiently employed and his research could be more productive?

(d) Continue a resolute search for more effective production methods.  
The Bottomley economies are substantially due to the fact (if it is a fact) that lecture classes can be enlarged without significant extra cost. That is easy if everything is expanding but even in a static system, something could be done to discourage the appearance of excessive variety which produces too many small and costly classes.

We must remember, however, the appalling record of the planning and not Government planners only, for private industry can be

vide plenty of examples of plans which never came to anything. The search for efficiency needs first of all an understanding of the impact of uncertainty; it needs effective and quick adaptation to unforeseen change. That adaptation is not always possible. If, to large changes of student preference, both between subjects and between higher education and other work, you add sudden shifts of Government policy, and a total absence of assurance about the future of that policy, you create a situation in which not even Marks and Spencer could run a university efficiently.

Thus, in my university, we have about 3,900 students, but buildings for 5,800, because this recurrent and capital programme have ceased to be to their proper relation.

We intended a staff-student ratio of 1 to 10 (meia teaching grades to full-time students), and were reluctantly persuaded to see this ratio slide to (say) 1 to 11; but the actual ratio is better than 1 to 9, because we increased staff early in the quinquennium in the expectation of a greater expansion than has actually occurred.

This overall ratio conceals gross discrepancies between departments, none of which were intended, but few of which can quickly be rectified.

It is good to learn from Dr Pickford's interesting statistical survey of administrative expenditure that even in the distant days of 1965-70 our administrative costs were a little less than predicted, because that suggests that they must now be very economical indeed; and no doubt we could point to go or two other areas of successful management.

But, overall, we are not efficient; the world has changed faster than we can adapt to it. Economies are not easy and, if Government want improved efficiency in universities, they must begin by reducing our uncertainties.

Charles Carter

The author is vice-chancellor of Loughborough University.



# BOOKS

## Can the centre hold?

## Properties of polymers

Prices are subject to fluctuations in rates of exchange.

**NORTH HOLLAND PUBLISHING COMPANY**  
P.O. Box 211 - Amsterdam - The Netherlands

- The Progressive in English (by J. Schaeffer)
- Readings in Portuguese Linguistics (ed. J. Sohm-Dit-Radefeldt)
- The Spanish Pronoun System (by E. García)
- Linguistics and Neighboring Disciplines (by R. Barroch and T. Vennemann)

*A descriptive brochure for the complete series is available on request.*

## NORTH-HOLLAND STUDIES IN THEORETICAL POETICS

**Vol. 1: The Organization of Prose and Its Effects on Memory (by B. J. F. Meyer)**  
1975 286 p., Paperback: US \$14.00/Dfl. 35.00

**Vol. 2: Pragmatics of Language and Literature (ed: T. A. van Dijk)**  
1975 about 175 p., Paperback: US \$18.00/Dfl. 45.00

**NORTH HOLLAND PUBLISHING COMPANY**  
P.O. Box 211 - Amsterdam - The Netherlands



## BOOKS



35 Hill Street, London W1X 8LJ

It is a pity that Cooper did not draw out what was best and most relevant from the tradition in which he was working. If there is any doubt that the study of Wittgenstein, Ryle and Austin teaches us about language, it is that the meaning of a sentence cannot properly be treated except in relation to some context of utterance, actual or possible. And knowing a language means being able to find the right words for the occasion, not being able to utter any sentence according to the context in which it was said. That there is more to knowing language than being able to produce grammatical sentences, is obvious to us as speakers of a most natural language, and someone who has studied modern synthetic theory too long.

Brian Butterworth



# BOOKS

## Protestant



## BOOKS

## A linguistic philosophy

## The Uralian family

## No common ground

K. J. CONNOR

**A. S. C. ROSS**

## Precise linguistic abstractions

## Do not write in jargon

**MANCHESTER UNIVERSITY**  
Oxford Road, Manchester

## Reviewers

of "The Place-Names of Cheshire"; Donald MacRao is professor of sociology at the London School of Economics; A. S. C. Rose has recently retired from the professorship of linguistics in the University of Birmingham; F. C. Stork is director of the language centre at the University of Sheffield and author of the forthcoming "So you want to learn a language".

new from **Black & Veatch**

**A HISTORY OF ENGLISH SPELLING** D. G. Scragg  
This book traces the history of English spelling from the Anglo-Saxons' adoption of the Roman alphabet to the present day. Dr. Scragg shows the influences on modern usage of native French and Latin orthographies and discusses changing ideas of correctness in spelling during the last 400 years. *Cloth £2.20 net, paper £1.20 net*

**SIR GAWAIN AND THE GREEN KNIGHT.** edited by W. R. J. Berron. The first volume in a new series of bi-lingual medieval texts gives the original in faos to the modern translation. It will be particularly useful to students in sixth-form and first-year university classes who are just beginning to explore medieval literature. *Manchester medieval classics* Pp. xvi + 175. £1.75 hb; cloth eddfor December £4.50 net

**PIERS PLOWMAN SELECTIONS FROM THE B-TEXT**  
 edited by Stella Brook This third volume in the bi-lingus  
*Mencheur medieval classic* comprises selections  
 based upon the Laud MS of the 'B' text. By judicious  
 selection the editor has been able to range more widely  
 than the Prologus and Passus I-VII which form the basis  
 of most student editions of *Piers Plowman*. The best  
 known passages from Passus I-VII are included but more  
 than half the selections are from the later part of the  
 poem. *Cloth £4.50 net; paper £2.00 net*

**PAINTING AND THE NOVEL.** Jeffrey Meyers. A study of three groups of related novels by Hawthorne, James, Forster and Lawrence, Huxham, Proust and Lampedusa, Dostoyevsky, Camus and Mann, who use actual paintings to form a symbolic core of meaning in their works. Dr. Meyers analyzes their novels in conjunction with the paintings and shows how one can explain the other. Cloth \$4.50 net; paper \$1.95 net.

**CRITICAL QUARTERLY** edited by **C. B. Cox** and **A. E. Dyson** For 18 years *Critical Quarterly* has been selling to large numbers of teachers preparing students for 'A' level English. Emphasis falls about equally on modern writing and the mainstream literary and cultural movements of the past. Each issue includes new poetry and many of the best poems of recent years first appeared in *Critical Quarterly*. 1976 subscription £3.50

**MANCHESTER UNIVERSITY PRESS**  
Oxford Road, Manchester M13 9PL





## In pursuit of an optical grail

Microphotography was originated by a distinguished English instrument maker, John Benjamin Dancer, in 1839, and developed by him to a high degree of technical perfection in 1850s. The suggestion of employing this new technique for educational and research purposes followed almost immediately, when in 1883 Sir J. F. W. Fowkes urged the use of the new medium for the publication of scholarly and reference works, such as encyclopaedias, atlases, and logarithmic tables.

Despite Herschel's brilliant and singularly foresighted suggestion, microfilm remained but a novelty for decades. Early in the twentieth century, a few pioneers had exploited its potential by reducing to miniature form manuscripts in archives.

Practical microphotography became a possibility after 1925—the year, when amateur 35mm photo-

Allen B. Veaner, director of bibliographic services Stanford University Libraries and editor in chief "Microform Review", begins this supplement on microfilm with an article on micro-techniques in American higher education, explaining the history of microforms. He also examines the characteristics, advantages and disadvantages of microforms and their future in the academic community.

graphy became a reality with the introduction of the compact, precision Leica camera. Within 10 years, large scale high production apparatus had been developed by the major photographic manufacturers, especially Kodak, which became a leader in the field. It was therefore not until the mid-1930s—40 years after Herschel's work had been published—that practical service to higher education on a large scale.

One of the first really significant events in micropublishing occurred about 1936, when Recordak (a subsidiary of Kodak created expressly for marketing its microfilm services) made available on 35mm microfilm the complete New York Times from 1914 to 1918.

The value of micropublishing was recognized immediately by the academic community, whose members could not have been fond of working with huge bound volumes of deteriorating newspaper. Harvard University Library in 1938 organized its Foreign Newspaper Microfilm Project, which was to revolutionize the distribution, storage, and use of foreign newspapers in research libraries. This project eventually became a routine programme

administered by the (US) Association of Research Libraries. In that same year the first modern microfilm, University Microfilms, was founded. The firm announced its intention to microfilm every English language imprint from 1475 to 1640—a vast project which is still under way.

Since these early days, hundreds of thousands, perhaps millions, of books, journals, diaries, archives, scrapbooks, manuscripts, newspapers—even the specimens of several herbaria—have been microfilmable and made available to scholars and libraries throughout the world. Technological developments continue apace. In the late 1960s and early 1970s there appeared the microfiche—a microfilm in the shape of a small, oblong, transparent card containing up to 3,000 images reduced to pictures as small as those made by Dancer over a century ago. Yet the practicality of high reductions for ordinary academic usage is coming into question for many reasons. Not the least of them is serious deficiencies in some portable reading equipment and failure to take into account human factors in the reading and research process.

### Unattainable fantasy

It seems that technicians and marketing managers were talking largely to themselves but not to actual and potential users of high reduction systems. In fact, low to moderate reductions have proven beyond all doubt their immense utility for source materials intended for the educational market, and it is very doubtful whether these ultrafiche will ever achieve wide popularity, unless certain critical optical, mechanical, and indexing problems are solved. Perhaps the most serious obstacle is the lack of a portable, pocket-sized, microfilm reader which remains the unattainable fantasy.

What is a microform? A highly reduced photographic image, usually of text, which requires an optical device in order to be read. Like computer tapes, microforms have been called by some an "invisible product", because they cannot be used without equipment.

Microforms exist in two basic formats: long strips of unperforated 16mm or 35mm film wound on 30 meter rolls or flat sheets of film (100mm by 148mm, typically) covering seven rows of images, 98 in all. (There is a third format carrying but a single image mounted in a computer tabulating card, but this format is exploited almost exclusively in industrial and defence applications. Images may be positive or negative (white text on black background) but the question of which is superior is probably not resolvable; each has its adherents.

Today, a galaxy of expensive, high precision equipment is essential to produce high quality microforms, particularly from very small type fonts. Yet even with all the trappings of technology as one's command, capturing on microfilm the delicate nuances of the author's hand in a manuscript is still considered more an art than a science.

In any event, creating microforms from retrospective publications remains an extremely labour-intensive activity. Occasionally one runs across schemes to microfilm all the books in the Library of Congress or the British Museum. The suggestion has even been made to make available the contents of the Harvard University Library anywhere in the world for \$15 per volume. All such far-fetched schemes overlook the heavy labour costs incurred in creating microforms from printed copy. The costs to undertake such massive projects are today's prices (on the order of \$16 per exposure) from bound volumes, foregone these ventures, none of which can be taken seriously as they would run into the tens and hundreds of millions of dollars.

Potential users are very numerous but somewhat confused as to the substantial conflicts according to the vested interests of various parties: copyright owner, educators, library administrators, v. library patrons, inconvenience of use v. savings in space and binding costs. Not all is positive and it would be seriously misleading to regard the microform as anything other than a mixed blessing (some might say curse).

Seven uses of microforms may be possible: (1) as a research tool for the educational community; (2) as a teaching aid; (3) as a reference tool; (4) as a research tool; (5) as a teaching aid; (6) as a reference tool; (7) as a research tool.

can free space for current imprints but is likely to cause an uncomfortable clutter among historians.

② Reduction of binding costs—a factor of increasing importance as the costs of labour and materials for binding escalate. Savings are partially offset by the need to buy and maintain special reading equipment and to staff the microform collections.

③ Preservation—in extend the life of materials printed in highly transitory media, e.g. newspaper and other wood-pulp papers; to reduce the wear and tear on fragile originals by making available accurately reproduced substitutes.

④ On demand copying—in disseminate selectively part or all of a corpus of material to any part of the world, where it may be consulted in the privacy of home or office and without the expense or inconvenience of travel to distant ports.

On demand copying may also be employed to produce full-size, bound facsimiles one off from suitably prepared microforms by means of Xerox Copyflo(R) equipment—a type of service which has been commercially available for nearly 20 years.

Micropublishing—to make available multiple copies of collections otherwise impossible to obtain or which are not marketable in hard copy. By means of its "collective capability", micropublishing can bring together into a single corpus related materials from a diversity of sources.

⑤ Continuous revision of data bases through computer-generated microforms, to produce promptly and regularly continuously updated files of comprehensive data bases, such as financial, personal, census, or bibliographic data. Such data in microform consume substantially less space than their paper counterparts and are relatively easy to store and transport. When issued with well designed, computer produced indexes in hard copy, such files may be more convenient to use than paper.

⑥ Comparative inexpensiveness of microfilm to make large quantities of material available cheaply. For example, the average price per title in the Kress-Goldsmith collection is only 60p.

The disadvantages of microforms are strikingly self-evident. Yet in the face of all organized promotional campaigns, the scholar or student may be too embarrassed to point out what would be clear to any child.

One cannot overstate microforms. Comparison of texts—surely the keystone of much scholarly research—is all but impossible. The patron is totally dependent upon machines, many of which have hardly been designed with academic use in mind and some of which lack the most obvious attention to human factors.

While a book can be used (and carried) almost anywhere and read in any convenient position, microforms generally cannot. Microforms are characterized by a somewhat greater degree of flexibility than books and the small images are susceptible to damage by scratching from improper handling or use on poorly maintained equipment.

Many microforms are so seriously lacking in elementary bibliographic control and indexing that they are almost impossible to determine their existence, or if once obtained, find quickly the exact item of interest.

### Browsing impossible

Because they comprise so many "look alike" objects, files of microforms are expensive to maintain. If complete confusion is to be avoided, there is little possibility of self-service in large microform collections.

Finally, it is practically impossible to browse through microform collections as one browses through a collection of books.

The rising cost of typesetting has now led some publishers to microfilm lengthy works, data directly from an author's manuscript and reproduce the results as microfiche inserted in a pocket affixed to the book. Similarly, wherever the editing process has been computerized, a text is available in machine-readable form, it is possible to bypass paper completely and issue computer-generated microfiche, several of which may constitute the "book" itself.

The transparent microfiche is rapidly gaining ascendancy over the once very popular "micro-opaque" form, chiefly because of the in-

herent superiority of discursive presentation systems over their opaque counterparts. Yet microfiche collections, such as newspapers, scripts, where integrity of the sequence is mandatory.

Simultaneous publication of a large body of material on microform alone with a detailed and carefully integrated index under a complex area of government documents. This is an indication of the last beginning to learn that the publication of material is not sufficient. "Software" must accompany the whole to provide an efficient key to its content.

Uncertainties as to how copyright legislation will finally deal with microfilm and copying rights, the application of micropublishing to the in-the-atmosphere microfilm, which might serve as a medium for the dissemination of graphic information, the economics of publishing by microfilm, the role of the microfilm in the future of the book, the role of the microfilm in the future of the book, the role of the microfilm in the future of the book.

In the technical area, one can come down in price and one can come down in quality. One can come down in price and one can come down in quality. One can come down in price and one can come down in quality.

### Performance failure

The recent advances in microfilm technology have been hailed as a revolution. Yet, in the face of all organized promotional campaigns, the scholar or student may be too embarrassed to point out what would be clear to any child.

One cannot overstate microforms. Comparison of texts—surely the keystone of much scholarly research—is all but impossible. The patron is totally dependent upon machines, many of which have hardly been designed with academic use in mind and some of which lack the most obvious attention to human factors.

While a book can be used (and carried) almost anywhere and read in any convenient position, microforms generally cannot. Microforms are characterized by a somewhat greater degree of flexibility than books and the small images are susceptible to damage by scratching from improper handling or use on poorly maintained equipment.

Many microforms are so seriously lacking in elementary bibliographic control and indexing that they are almost impossible to determine their existence, or if once obtained, find quickly the exact item of interest.

Because they comprise so many "look alike" objects, files of microforms are expensive to maintain. If complete confusion is to be avoided, there is little possibility of self-service in large microform collections.

Finally, it is practically impossible to browse through microform collections as one browses through a collection of books.

The rising cost of typesetting has now led some publishers to microfilm lengthy works, data directly from an author's manuscript and reproduce the results as microfiche inserted in a pocket affixed to the book. Similarly, wherever the editing process has been computerized, a text is available in machine-readable form, it is possible to bypass paper completely and issue computer-generated microfiche, several of which may constitute the "book" itself.

The transparent microfiche is rapidly gaining ascendancy over the once very popular "micro-opaque" form, chiefly because of the in-



## Not merely a smaller kind of book

Bernard Williams

When we come to view the mid-1970s in retrospect it may be seen as the time when major changes in the way information is published and distributed began to take place. At many similar situations, the technology to realise such changes became available much earlier and initially seemed unlikely to effect the non-trivial changes in publishing to any significant degree.

It may well be, however, that the present problems of traditional publishing—compounded of rising production and postal costs as well as demand reduced by the economic recession—linked to the increasing use of newer methods of multiplying the written word will provide a catalyst producing major changes in the patterns of publishing and information dissemination.

For centuries printing has remained unchanged as the sole method of multiplying the written word; the assumptions of printing technology have provided the cornerstone for the publishing industry, the way in which information is presented, and for the world's copyright system.

That classical situation is now changing rapidly: printing is a specialized and therefore necessarily centralized process—is increasingly affected by competition from newer multiplication technologies. Most of the newer technologies replace the preprinted edition by the production of copies on demand; many of them are capable of decentralized operation using unskilled operators at user points, while one—microfilm reproduction—adds to all of these assets the advantages and disadvantages of miniaturization.

Microform technology (increasingly referred to as micrographics) has its origins in the early development in photography which took place in the first half of the nineteenth century. Initially—and then not until the First World War—high speed photography was limited to the preservation of rare items. In the 1930s the advantages of microforms for preserving scholarly material in quantities too limited to justify producing were exploited by a number of entrepreneurs and microfilm publishing was born.

Since then, if the micropublishing industry has failed to live up to the predictions for the near total replacement of our scholarly libraries made by Fremont Rider in 1944, it has grown consistently and steadily, a time when conventional publishing was also expanding. Now with conventional publishing in difficulties, the micropublishing industry in Britain—located to be achieving an annual growth of between 25 per cent (United States Department of Commerce) and 40 per cent (G. G. Baker and Associates). The total market remains as yet small compared with conventional publishing, but it is growing rapidly.

The traditional micropublishing medium is 35mm roll film. It is still widely used for retrospectively publishing complete back runs of newspapers (including the Times Higher Education Supplement) and some periodicals, where its relatively low production cost and regularity of reduction ratio, is well

suited to large or difficult originals. For a move a straightforward material there is an increased tendency to use 16mm roll film. The smaller size is associated with more modern, less expensive reader equipment and offers increased scope for cassette or cartridge loading, an advantage somewhat offset by the industry's belated move towards cassette and cartridge standardization—no micrographic company apparently possessed the foresight exhibited by Philips in the audio-tape field.

If it is taking analogy too far to use all roll film as an equivalent stage in bibliographic development to the medieval scroll it is certainly true that the linear arrangement of something in the region of 600,000 pages scarcely commends itself for popular use. That being so, it is increasingly clear that the microfiche is consolidating its position as the most ubiquitous of the microform media.

Microfiche are now used for a very wide range of purposes ranging from computer controlled storage in automated information retrieval units in use by individuals in the school or home. For publishing purposes virtually all microfiche are now limited to the single size of 105 x 148mm (the international A6 format) but within that size a number of formats are permitted. The popular format for most publication purposes is the 24x reduction microfiche which holds the equivalent of up to 98 A4/quarter pages (the slightly older 60 frame fiche remains compatible with the 98 frame fiche on most reading equipment).

For material produced directly from computerized data it is common to use higher reductions producing up to 300 pages per microfiche. Certain proprietary systems use even higher reductions to attain 3,000 pages or more. In addition to providing a publishing medium, microfiche can be duplicated on-demand by libraries for as little as 5p each—about one tenth of a penny per page.

Although technology may eventually change the situation within the next decade, virtually all original recording takes place on silver halide film. For the production of duplicates, however, silver halide has long since lost its monopoly and large quantities of duplicates are distributed on diase film or, to lesser extent, vesicular film. The two newer materials offer substantial advantages over silver halide film in that they are cheaper (diase especially so) and much more convenient to produce. Use of the traditional silver halide remains essential where archival properties are required—little objective information is at present available about the lifetime in use of either of the newer materials.

There are several fairly distinct categories of micropublishing: Retrospective micropublishing is the traditional category dealing with the publishing or reprinting of older material, collections originally published in conventional form. One major segment is concerned with no less than the history of books, newspapers and microform. The other segment is concerned with the publishing of complete collections of archival material.

This part of the business tends to be made up of small companies which locate suitable archives, carry out any necessary arranging and indexing and publish them on film, microfiche or micro-opaque. Typical recent examples comprise a collection of art catalogues from Chiswick House, a collection of pamphlets from the Lambeth Palace Library, Lincoln Cathedral Libraries from World Microfilms, a catalogue of John Tyndall papers and correspondence from Mansell and a Middle East Data File from University Microfilms.

Since the micropublishing industry has failed to live up to the predictions for the near total replacement of our scholarly libraries made by Fremont Rider in 1944, it has grown consistently and steadily, a time when conventional publishing was also expanding. Now with conventional publishing in difficulties, the micropublishing industry in Britain—located to be achieving an annual growth of between 25 per cent (United States Department of Commerce) and 40 per cent (G. G. Baker and Associates). The total market remains as yet small compared with conventional publishing, but it is growing rapidly.

The traditional micropublishing medium is 35mm roll film. It is still widely used for retrospectively publishing complete back runs of newspapers (including the Times Higher Education Supplement) and some periodicals, where its relatively low production cost and regularity of reduction ratio, is well



Illustrations made from microfiche editions.

Original micropublishing denotes another new segment of the business where the microform version is the only version published. Advantages over simultaneous publishing reside in the fact that the publication can be arranged specifically to suit the characteristics of microfiche while concern about the effects of competing versions are avoided with the distribution of original micropublishing is provided by the British Library's Books in English publication issued on high reduction microfiche.

Utility micropublishing scarcely qualifies as publishing proper since it is concerned with the distribution of microfiche within an organization, usually in a service manual and similar data. Microfiche (usually microfiche or cassetted diase roll film) are now widely used by most manufacturing, business and public utilities for distributing information to agents or to service men. Utility micropublishing is the more attractive area for equipment manufacturers because it provides the source of large single orders, sometimes running into thousands of units, for reading equipment.

The newest area involving micropublishing is concerned with the combining of conventional and micropublishing techniques to provide completely new information packages. One aspect is exemplified by the synoptic journal.

The idea here is that with specialized journal publication becoming increasingly marginal the needs of individual users could be met more economically by a journal containing substantially shortened articles or synopses. The synoptic journal would then be locked up by the full text on microfiche (or alternatively miniaturized offset) available on demand from appropriate libraries or the original publisher. The Chemical Society is one organization which recently announced its intention of publishing a number of synoptic journals.

Micropublishing is not without its own quota of problems. In a business ultimately dependent on the provision of low cost reading equipment, inadequate priority is attached to standardization and equally important, to stabilizing standards over a reasonable span of time. Quality control in the production of microforms is sometimes lacking—like the wartime heck market—materials which were not intended to be eaten and sometimes get the impression that microforms will be read.

Microforms have also suffered from the assumption that they are simply miniaturized versions of conventional publications—the fact that they need significantly different treatment in both typography and general presentation is being belatedly recognised.

The National Reprographic Centre for Documentation has been very active in specifying both the bibliographic requirements of the media and the technical requirements of reading equipment. We still need to know much more about the human factors of reading from screen images.

As one of the media easily duplicated or printed out on demand, microforms pose many problems for a copyright law that is based on the assumptions of printing technology. If the principles of intellectual copyright are to be preserved the mechanism will have to be dramatically changed to cope with modern dissemination technology.

Traditionally, the case for microforms has been based on the provision of certain obvious advantages in the storing and distribution of information against some marked disadvantages, compared with the printed page, or the minutiae of reading. With improvements in the equipment, media and presentation the gap in acceptability is tending to narrow. It may conceivably narrow much further if early evidence that children read as readily from screens as from books continues to accumulate.

The author is director of the National Reprographic Centre for Documentation, Hatfield Polytechnic.



Illustrations made from microfiche editions.

Original micropublishing denotes another new segment of the business where the microform version is the only version published. Advantages over simultaneous publishing reside in the fact that the publication can be arranged specifically to suit the characteristics of microfiche while concern about the effects of competing versions are avoided with the distribution of original micropublishing is provided by the British Library's Books in English publication issued on high reduction microfiche.

Utility micropublishing scarcely qualifies as publishing proper since it is concerned with the distribution of microfiche within an organization, usually in a service manual and similar data. Microfiche (usually microfiche or cassetted diase roll film) are now widely used by most manufacturing, business and public utilities for distributing information to agents or to service men. Utility micropublishing is the more attractive area for equipment manufacturers because it provides the source of large single orders, sometimes running into thousands of units, for reading equipment.

The newest area involving micropublishing is concerned with the combining of conventional and micropublishing techniques to provide completely new information packages. One aspect is exemplified by the synoptic journal.

The idea here is that with specialized journal publication becoming increasingly marginal the needs of individual users could be met more economically by a journal containing substantially shortened articles or synopses. The synoptic journal would then be locked up by the full text on microfiche (or alternatively miniaturized offset) available on demand from appropriate libraries or the original publisher. The Chemical Society is one organization which recently announced its intention of publishing a number of synoptic journals.

Micropublishing is not without its own quota of problems. In a business ultimately dependent on the provision of low cost reading equipment, inadequate priority is attached to standardization and equally important, to stabilizing standards over a reasonable span of time. Quality control in the production of microforms is sometimes lacking—like the wartime heck market—materials which were not intended to be eaten and sometimes get the impression that microforms will be read.

Microforms have also suffered from the assumption that they are simply miniaturized versions of conventional publications—the fact that they need significantly different treatment in both typography and general presentation is being belatedly recognised.

The National Reprographic Centre for Documentation has been very active in specifying both the bibliographic requirements of the media and the technical requirements of reading equipment. We still need to know much more about the human factors of reading from screen images.

As one of the media easily duplicated or printed out on demand, microforms pose many problems for a copyright law that is based on the assumptions of printing technology. If the principles of intellectual copyright are to be preserved the mechanism will have to be dramatically changed to cope with modern dissemination technology.

Traditionally, the case for microforms has been based on the provision of certain obvious advantages in the storing and distribution of information against some marked disadvantages, compared with the printed page, or the minutiae of reading. With improvements in the equipment, media and presentation the gap in acceptability is tending to narrow. It may conceivably narrow much further if early evidence that children read as readily from screens as from books continues to accumulate.

The author is director of the National Reprographic Centre for Documentation, Hatfield Polytechnic.

important, to stabilizing standards over a reasonable span of time. Quality control in the production of microforms is sometimes lacking—like the wartime heck market—materials which were not intended to be eaten and sometimes get the impression that microforms will be read.

Microforms have also suffered from the assumption that they are simply miniaturized versions of conventional publications—the fact that they need significantly different treatment in both typography and general presentation is being belatedly recognised.

The National Reprographic Centre for Documentation has been very active in specifying both the bibliographic requirements of the media and the technical requirements of reading equipment. We still need to know much more about the human factors of reading from screen images.

As one of the media easily duplicated or printed out on demand, microforms pose many problems for a copyright law that is based on the assumptions of printing technology. If the principles of intellectual copyright are to be preserved the mechanism will have to be dramatically changed to cope with modern dissemination technology.

Traditionally, the case for microforms has been based on the provision of certain obvious advantages in the storing and distribution of information against some marked disadvantages, compared with the printed page, or the minutiae of reading. With improvements in the equipment, media and presentation the gap in acceptability is tending to narrow. It may conceivably narrow much further if early evidence that children read as readily from screens as from books continues to accumulate.

The author is director of the National Reprographic Centre for Documentation, Hatfield Polytechnic.

# 400,000 volumes on microfiche available from stock

IDC has been filming rare materials for you on microfiche, from rich libraries in Europe and North America, for 17 years. There are monographs and serials in almost every field. The selection of titles has been done by specialists at the invitation of IDC.

The catalogues for the various subjects are available free of charge. (See below.) Unlike many other microform publishers, IDC offers separate monographs and even separate volumes of serials.

Please feel free to request information and/or catalogues in your field. We will also supply you with a sample microfiche and a booklet introducing microfiche and IDC.

### Form for free catalogues

I would appreciate receiving the catalogues in my field, as indicated, together with the booklet about microfiche and a sample microfiche, all without obligation.

D Chemistry/Physics	O Political science	Interdisciplinary fields:	O Near/Middle East/North Africa
O Botany	O Education	O Russia	O Africa south of the Sahara
O Zoology	O History of art	O Eastern Europe	O North America
O Geology/Paleontology	O Musicology	O East Asia	O Latin America
O Astronomy/Mathematics	O Philosophy	O Inner/Central Asia	O Arctic and Antarctic studies
O Geography	O Theology/Religion	O South Asia	O Pacific studies
O Economics	O Philosophy/Linguistics		
O Law	O Archaeology		
O Sociology	O History		
O Statistics	O Psychology		
O Anthropology	O Medicine		
O Ethnography/Demography	O Genealogy		

Please send this form to:  
IDC AG, Poststrasse 14, 8300 Zug, Switzerland.

Mansell

are already widely-known for the methods and techniques they have developed for the photolithographic publication of the *British Museum General Catalogue of Printed Books and The National Union Catalog, Pre-1956 Imprints*. Now they can offer a microform production service for all kinds of material ranging from printed works to written documents. In particular, they have a wide experience of reproducing in economically viable forms valuable and fragile records which it would not be possible to issue by means of more conventional processes. Duplication is available on diase and silver-halide material.

For further information, please contact:

Mansell

35-37 William Road  
London NW1 3ER  
Telephone: 01-387 0451



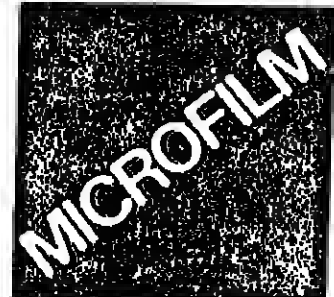
OXFORD MICROFORM PUBLICATIONS LTD  
Blue Boat Street  
Oxford OX1 4EY  
A member of the Blackwell Group

active in every aspect of scholarly and educational micropublishing is offering:

- Microform readers and reader-printers, including THE FUJIFILM
- Microfilm storage and retrieval methods
- Please ask for detailed catalogue of hardware and supplies.
- Out-of-print books on microfiche
- Organized comprehensive collections of reprints
- Thematic series with new introductions and indexes
- Archives and source documents
- To facilitate research. Many collections need limiting for publication and security. Please enquire about production.
- Journals and periodicals both current and back issues
- Monographs, theses and reports in bound microfiche books

Please do let us know of your interest in micropublishing. We will gladly send you catalogues and discuss developments and projects.





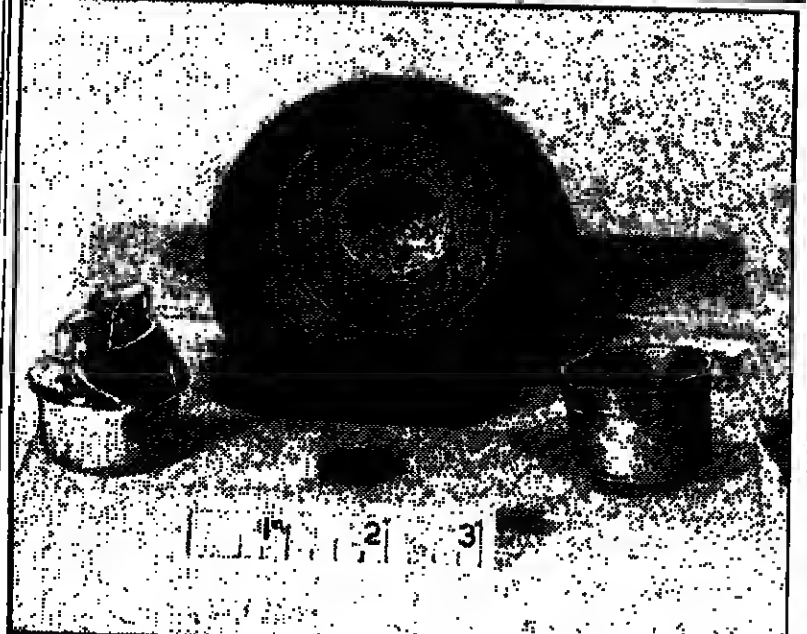
## Dotting their spies

Microdots (microscopic photographic copies of espionage messages) are periodically mentioned in the media, and it is easy for the layman to form the incorrect impression that the making of microdots is very new and terribly secret.

For fun or for motives that can only be guessed, men have for centuries made miniature inscriptions. In 1481, a monk wrote 14 verses of St John's Gospel in a circle smaller than a half-penny. In his book, *Micrographia* (1664), Robert Hooke described the appearance of such miniature writing seen through the microscope, and suggested its use for furtive communication if it could be made easier and clearer. With his microphotograph, Peters (a London banker) in the 1850s used a diamond chip to make legible characters one-tenth of an inch high on glass. His machine (in working order) is in the Museum of the History of Science in Oxford, and the compactness of its writing was described in units of Bibles per square inch.

But over the years, the Peters machine was being made, Scott Archer evolved his almost painless wet collodion plate, and Dancer and other British microscopists used it to produce microscopic copies of a whole book page. Their method was to make a somewhat reduced photographic copy of the page, and then use from this a reversed microphotograph to project a truly microscopic image on the plate. In modern parlance, they made a microfilm of a microfilm.

With even better reason than Books, Sir David Brewster appreciated their potential for concealment, and in the *Encyclopaedia Britannica* (1857) wrote that microphotographic messages could be hidden in an ink blot or a full stop. Commercial production of minute copies of texts and engravings started in England and France,



Left: above, Peter and Helen Kroger, convicted spies; below, table-top lighter and torch with false bottoms used by them. Right: above, microdots found in envelope in Mrs Kroger's handbag (enlarged approximately 13 times); below, enlargement of one microdot.

and the results were sold as curios or for recreation. Secrecy was non-existent, since working methods for making the images were published, and special cameras were openly sold for the purpose.

However, these early developments were soon forgotten, and in 1946 a sensation occurred when the head of the Federal Bureau of Investigation published the discovery of German espionage microdots. These were the size of a full stop, and a hypodermic needle was used to cut out minute discs of film and plant them exactly positioned in paper. In fact, the microdots were camouflaged in the gaps of dots forming lines on a telegram form or the petticoat-decorating inside of an airmail envelope. So effective was this method of concealment that it was expected to avoid detection even on wartime censorship of mail.

Other nations have also used microdots. In Britain and Atomic Energy 1939-45, Margaret Gowing related how Danish Resistance transmitted a microdot containing a personal letter from Professor (later Sir John) Cockcroft to Professor Niels Bohr. As a consequence, this leading nuclear physicist came to England and the United States to help in the Manhattan Project. For the British public, a memorable example was the microdot found in the Krogers' house at Ruislip in 1961 and shown at the Old Bailey during the Portland espionage trial. But these cloak and dagger stories are rarely considered by thousands of commercial and industrial workers for whom microphotography is an indispensable daily working tool. From the 1860s, production of curios can be directly traced to Degroot's development of the process for mass production of the messages flown into Paris during the Franco-Prussian War (1870-71). For some months it was the only means by which the he-

sembled city received news from unoccupied France. This was the first major application of microphotography to the solution of a human predicament, and the precursor of the microfilm industry.

In his 1857 article, Brewster also discussed the use of Dancer's process to make scales for eyepieces of scientific instruments. Manufacture of optical instruments, Manufacture of optical instruments, Manufacture of optical instruments, and in 1918 the Allies found they were without the means of making the gratings needed to replace sunights smashed on the Western Front. The British optical industry made up for this deficiency, but on the basis of the user producing his own sunlight and sensitizing his own plates.

In 1940, photographic manufacturers started to sell plates suitable for this work and they were widely used for manufacture of gun and bomb sights in the Second World War. Application soon extended to the production of coded scales for self-reading instruments, and the

making of metrology gauges and in feed-back systems for numerical controlling. With the spreading applications, this special branch of photography merited the publication of a definitive text, *Microphotography*.

But events took a surprising turn and technology experienced what can now be seen as a significant quantum jump. Military interests demanded robust and clear-printing photographic images on glass, coated with layers which formed acid resistant stencils for exposure and development. The needs of this work and the perfection of a family of "photoresists" possessing extraordinary chemical resistance, even when present in ultra-thin layers. At the same time, the needs of airborne electronics and computers raised the electronics industry to pursue a vigorous programme for the miniaturization of equipment. This work was accelerated in the United States by the news of the launching of the Soviet Sputnik satellite and within four years the first integrated circuits appeared.

The production of integrated circuits is so complex to explain fully here, but it depends absolutely on the multi-stage application of two photographic processes. Each stage involves the production of a complex pattern, which is reproduced many times of minute size to fill the area of a plate. The complex image is then printed on photoresist coated on a silicon slice, and is processed to form a stencil. Subsequent chemical and heat treatments cause the electrical properties of the silicon to be modified in patterns controlled by the stencil. The degree of the patterns in several superimposed layers causes the same cycle of operations to produce transistors, diodes, resistors and capacitors and their inter-connections in the silicon. These processes depend on the mass production of images of microdot fineness, and are intensively used to manufacture circuits for television, communication systems, quartz watches, pocket calculators and computers.

In addition to the reduction of weight, integrated circuits offered other advantages. They were extremely reliable, largely because the number of soldered joints was drastically reduced. In computer, they were able to handle high speed, complex calculations of the reduced distance which impulses had to travel. In addition, costs were lowered.

It is interesting that the integrated circuit (IC) is a result of the merging of two major technologies of the age, namely photography and electronics. In many ways, ICs affect the life of the man in the street. They facilitate airport traffic control and satellite relayed transmission of television programmes. Involvement in computer and complex projects is having a marked effect on future job prospects. Even the school children are not left out. Today it is argued whether they can take pocket calculators into their examinations. Tomorrow they may call into question the need for much of the arithmetic taught today.

The author, an authority on microfilm communication, must remain anonymous for commercial reasons.



## Packing them in the library

J.H. Lamble

The conventional concept of the role of microfilm in libraries was almost entirely concentrated on its space-saving capabilities and revolved around the 35mm reel and clumsy reading equipment that did more to discourage than encourage its use; the equipment manufacturers do not appear to have had much interest in the needs of libraries as a potential market.

As a result it is difficult to find a librarian, or indeed a library user, who has any great enthusiasm for the medium. The advantages of space-saving were further cancelled out when the collection of microfilm had to be made available to a large number of users at the same time who then occupied more space in reading the microfilm than they would have reading a book.

The developments of the past few years, however, in 16mm film and fiche and computer output microfilm (COM) have led to the microfilm industry being able to develop systems for the storage and retrieval

of information which, although designed for a commercial market, do have a potential in the educational field. A few simple experiments have been tried at Bath University which, although carried out on a very limited scale, have been encouraging both from the point of view of acceptance by the student body to produce copies of the files as and when desired. This equipment was obtained when the new library building was commissioned and, while its first use was considered to be in the conventional archival storage role of microfilm, we have continually sought other ways to exploit it.

There has always been a close link between the library and the educational technology effort in the university so that it was natural to consider the potential use of microfilm to teaching aid. (Commercial teaching machines of the 1950s used microfilm of course, albeit 35mm reels).

A first examination showed the following three potential uses: Study packs: particularly in subject areas within the social sciences where there is heavy dependence on background reading. While it smacks of spoon-feeding the student, there are many advantages to assembling copies of the assigned reading to a specific topic in one package. There are, of course, disadvantages which have prevented a full study of this as yet, but the economic factors are straightforward—60 pages of xeroxed work cost about £1.50; 60 pages of jacketed microfilm about 60p (including labour) and a copy of that microfilm about 5p.

The recording of complicated visual material used in a lecture situation to which the student can refer afterwards. As an example of this we have microfilmed and jacketed a sequence of some 20 overhead transparencies used by a lecturer in che-

mical engineering in his lectures on the flow of compressible fluids and which, inescapably, contains more information than is ideal for the medium. Incidentally, in this connection, microfiche readers are now being produced which can be used by projectors quite suitably for small groups; this could have benefits for those lecturers accustomed to having to carry around a sequence of slides in order and the right way up.

The creation of a package of notes on a particular topic intermingled with extracts from the literature which we hope will combine two functions: an advancement in the student's knowledge of that particular topic and at the same time an increase in his awareness (and hopefully his utilization) of the literature of his discipline.

There has been dissatisfaction for some time with the status and effectiveness of instruction to undergraduates in the techniques of information seeking and handling. A theory exists that this instruction is more effective if integrated with the actual subject tuition: the motivation of the student to acquire the skills of information retrieval is increased by the demonstration of its relevance to his studies. Although the programme could only be read on machines not normally found in a student's possession, it was interesting to find that all of the students involved wished to purchase a copy for permanent retention.

Of course one has to overcome the reluctance to use microfilm as well as overcome the reluctance to use audio-visual aids that still exists on the part of many lecturers. One advantage at Bath is that the library catalogue has been automated for some time and extensive studies were made of the acceptability and efficiency of different forms of output compared with the conventional card catalogue. Both types of microform output—fiche and film—performed well enough so that the catalogue can now only be consulted in microform. Use of the catalogue has since increased and much of the mystery has disappeared from the medium.

The author is the librarian of Bath University.

## Resistance combat centre

Patricia Santinelli

Lack of standards in microforms, and expensive equipment were all factors which motivated the development of the National Reprographic Centre for Documentation at Hatfield Polytechnic as a national information and advisory centre.

The idea of a centre concerned with the applications and technology of micrographic, reprographic and other new media for documentation gave important advice to independent commercial factors originating in a research project under the former director, Dr Gordon Wright, became firmly established in 1967, under the terms of a research grant from the Office for Scientific and Technical Information.

The centre operates under the guidance of a small advisory committee and now has 800 subscribers, a number which has increased at a rate of 10 per cent a year.

One of the centre's earliest activities was standardizing and improving reading equipment and it has steadily begun to test and evaluate equipment already on the market in order to develop some of the art to improve the reader, for example, were much better, and had to be viewed in a darkened room.

Microform reading equipment has now reached a stage where one can find a radical improvement in the quality of the reproduction. There have been no great breakthroughs, just developments such as the use of the quartz halogen lamp, and the "soften" of the light.

All signs indicate that microform technology have taken notice of the aspect of the centre's work and they are willing to submit their equipment for evaluation—even if it means being "soften" of the light.

escape the net since NRCD only evaluates a percentage of what is on the market and each piece of equipment takes one month to be tested.

However, it is clear that the full technical reports have encouraged manufacturers to produce cheaper, lighter, longer lasting and easily operated equipment.

Equally successful is the annual programme of short courses on micrographics, computer output microfilm, graphics and offset, and library reprographics, which normally attracts about 200 applicants every year. The courses are organized by Mr Tony Hampshire, a senior lecturer in reprography at Hatfield Polytechnic, and members of NRCD, including the director, participate in lecturing.

"We like our courses to be informal and find it better to deal with small groups," said one member of the staff. "We decided not to run one-day courses, simply because they do not provide sufficient contact with students, nor can we effectively help them in the time available."

Normally the centre runs three or four courses a term but micrographics which is very popular is covered 10 to 12 times a year. This particular course is divided in two parts: theory and practice and theory by itself.

"Originally there was only one course in micrographics, but it was far too general and did not fulfil individual needs so we decided to change it," Mr Williams explained. Basically the course aims to provide a broad coverage of microfilm systems, media, techniques and hardware and the design of systems for technical drawings. Business records and micropublishing are covered as well. Practical and demonstration sessions are included. In addition, with computer output microfilm (COM) systems are analyzed.

NRCD work also includes a well established programme of research and, where appropriate, projects are contracted to other organizations. All research grants come from the British Library, so the centre has to "sell" its projects to them before it can go ahead. Approximately £20,000 a year is made available for its research and it is taken

Some projects are purely technical, such as the investigation on the storage life of microfilm and films. The archival quality of silver halide films has already been proved but there is some controversy over this particular use of diazo film. Research so far indicates that this type of film will fade more rapidly than does not have archival quality.

Another project which is due to start in January is being undertaken jointly by NRCD and the Royal College of Art. It is mainly concerned with identifying the typographic and ergonomic factors significant in the design and presentation of microfilm information; the project is particularly designed to determine the methodology for further research.

The crisis in publishing forms yet another project on which the centre is working, together with the universities of Leicester and Sheffield. The project is divided into three parts: a survey of monographic publishing; a survey of learned journals publishing and a survey of the alternatives to conventional publishing as they affect the consumer; for example, looking at microforms and new ways of publishing, such as synoptic journals.

Another area which concerns the centre is the maintenance or development of standards. Talking about microfiche, Mr Williams said that the kind which originated from the USA was of had quality both technically and in terms of content.

Mr Williams pointed out that the definite advantage of microfiche were very clear: it was as cheap as a card and it was as large as a type illustration could be put on the same page or opposite; it made possible obtaining information from the other end of the world almost immediately instead of waiting for a month for the original paper to turn up. He added that microfiche was also more economical than 35 or 16mm roll film which microfilming a single book since 98 pages could be got onto a normal fiche at a cost of only 5p.

In spite of these benefits the centre believes that user resistance is still very high. On the whole it is due to the experience being although commercial publishers have high standards, institutions are still lagging behind.

# HARVESTER

## UNPUBLISHED STATE PAPERS OF THE ENGLISH CIVIL WAR:

### WHEREUNTO IS ADDED, The Reign of King Charles the First, AND King Charles the Second.

In which are many Material *AFFAIRS* of *STATE*,

First part of extensive four-part series of Unpublished State Papers, indexed, from Public Record Office, classes: SP 20, 22, 24 and 28. 35mm silver-microfilm, £298.00.

## CABINET REPORTS BY PRIME MINISTERS TO THE CROWN

Nearly 1,700 confidential letters, 1868-1916, being the only official record of Cabinet meetings. 35mm silver-microfilm, £198.00.

## THE DICKENSIAN, 1905-1974

Complete run, with new cumulative and analytical index. Silver-microfiche, £195.00 (index, £26.00).

## FABIAN SOCIETY MINUTE BOOKS

Previously unpublished minute books, 1884-1918, from Britain's most famous political society. Silver-microfiche, £158.00.

## NATIONAL EXECUTIVE MINUTES OF BRITISH LABOUR PARTY

Unpublished minute books, 1900-1960, available in five sections, with index to follow, from Archives of British Labour Party programme.

## THE LEFT IN BRITAIN

More than 85,000 pages of 'left' publications since 1930's, in five parts with index to follow: send for full listings.

## THE MICROPUBLISHERS' TRADE LIST ANNUAL

Complete bibliographic search tool for output of more than 200 micropublishers, world-wide. £24.00.

HARVESTER PRESS • HASOCKS • SUSSEX

## Microfiche titles

- Archives of British Men of Science By Roy M. MacLeod and James R. Freiday. 65 fiche (COSATI 60 frame format) plus printed index and guide. £30.00
- The Brasenose Conference on the Automation of Libraries Edited by John Harrison and Peter Laslett. 2 fiche (NMA 98 frame format). £2.25
- John Tyndall: Natural Philosopher, 1820-1893 Catalogue of Correspondence, Journals and Collected Papers By James R. Freiday, Roy M. MacLeod and Philippa Shepherd. 54 fiche (COSATI 60 frame format) plus printed index and guide. £30.00
- The Vaughan Williams Memorial Library Catalogue of the English Folk Dance and Song Society. 34 fiche (COSATI 60 frame format). £20.00

## South Asian Government Bibliographies

- Union Catalogue of the Serial Publications of the Indian Government 1858-1947. 3 fiche (NMA 98 frame format). £2.25
  - Union Catalogue of the Central Government of India publications held by libraries in London, Oxford and Cambridge (1947-68). 3 fiche (NMA 98 frame format). £3.00
  - Union Catalogue of the Government of Ceylon publications held by libraries in London, Oxford and Cambridge (1948-69). 2 fiche (NMA 98 frame format). £1.25
  - Union Catalogue of the Government of Pakistan publications held by libraries in London, Oxford and Cambridge (1947-66). 2 fiche (NMA 98 frame format). £1.25
- Complete set of the above four titles: £6.00
- All the above titles are subject to V.A.T. in U.K.

## Microform guides

- International Microforms in Print. 1974/1975 A guide to microforms of non-United States micropublishers Edited by Allen B. Veaner and Alan M. Meckler. About 6,750 entries list monographs, journals, newspapers, government publications and different kinds of archival material available from non-United States publishers and agencies. Paper. £3.75
- Microform Market Place 1974/1975 An international directory of micropublishing Edited by Allen B. Veaner and Alan M. Meckler. The main section contains an alphabetical list of some 375 organizations that sell microform titles and offer reprographic services and provides detailed information including microform programmes and subject areas covered. Paper. £3.75
- Microforms in Libraries A reader Edited by Albert James Diaz. A wide variety of articles appear under the following headings: Introduction to Microforms; Organizing the Microform Collection; Bibliographic Control; Applications; Standards and Specifications; and User Reactions. Cloth. £8.95

**Mansell**  
3 BLOOMSBURY PLACE LONDON WC1A 2QA



Although the wilder claims of non-librarian microphotography enthusiasts have never been matched in reality, it is true to say that university librarians have been

Although one obvious gain in using microforms in place of bound volumes is space saving, it is not the only one, nor is it the usual motive of the librarian when acquiring material in this form. Often microfilm provides the only possible means of acquiring library stock such as copies of rare out-of-print books, valuable early printed texts (in this way the treasures of our



The 1970s have seen a surge forward in micropublishing projects in this country. Presumably they will attract more librarians because the economics of "traditional" publishing clearly indicate that microform must become the only possible way of getting them published. *Books in English*, a standard book selection tool for librarians, as well as the current bibliography of English language publications, is produced on microfilm. *Microfilm in the Schools* films bimonthly, culminating in a six or seven fiche listing the annual output of some 300,000 books printed in English. Another example

It may well be that there is a preponderance of material available on 35mm film just because pioneers in the industry have remained beset by the fear that this "out-it-is" standard is a fatally flawed one. The film is commonly put into reading machines at first attempt upside down and back to front even by library staff. Microfiche is certainly much easier to handle efficiently and quickly. To wean carefully and gently. It would be most welcome if the impetus that American governmental bodies such as the National Science Foundation, Scientific and Technical Information, and NASA have given to standardization by issuing their reports on microfiche.

Microforms are therefore a valuable addition to the stock of a university library, supplementing printed provisions and although books are used not fear that books will be replaced, microform provisions in libraries will continue to grow.

*The author is librarian of the University of Toronto's Library of City University and is an honorary editor of the Journal.*

I was particularly enthusiastic about the Xerox 340, a device which is new to the American market and is sold in Britain as the Washington Scientific Mini-Cine camera model MC1114. This basic camera features a screen on the back of the camera at a viewing angle of 65 degrees, which is vertical on to which the image is projected. The mirror is located in the top of the unit.

In the last three years there has been a notable renaissance of such rear projector readers. These have tended to be confined to library use, primarily for the convenience of securing projects, although providing screen image superior in some way to rear projectors, tended to be somewhat impractical for general use.

However, many projector lamps of the point light source type have been replaced by the fluorescent type, the use of new screen materials in the Xerox 340 uses an aluminium-coated screen has substantially changed the situation. Other recently introduced rear projector readers are the Kodak Bkalis 100 and the Bell & Howell Micro Cine.



will have to be bought from the manufacturer. It should also be carefully considered whether manual or an automatic retrieval machine will be needed. In some cases the high speed of frame grabbers may look an attractive and efficient possibility, but may well be very costly, although certainly more expensive.

Essential features which should be looked for and checked on screen luminance and resolution. It is advisable to examine three or four readers at the same time, should certainly be remembered that if there is not sufficient light on the image to read in comfort the reader is not doing its job well.

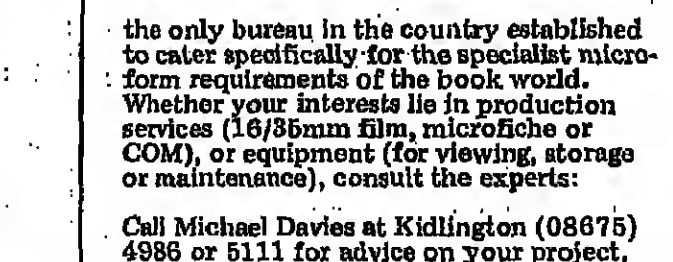
The NCBI and heath model which is particularly suitable for librarians wishing to adopt the BNB "Bibliography in English" bibliography production in PC format. This is a microfilm/ microfiche/ microfilm reader which is designed to be used in a computer, then the PCMI reader is normally used for this purpose. The reader has interchangeable lenses for reading from Xlon to microfiche to microfilm microfilm systems.

In the 16mm microfilm equipment range, Scatlab Instruments have the Pincer and Comet microfilm readers. The Pincer is a microfilm and the immediate difference between them is the type of cassette used. The Pincer, which is particularly widely used in computer catalogues, uses the VSMF type cassette offering maximum film protection but not reloadable by the user. The Comet uses the Comet cassette which offers less protection but more flexibility.

For a complete list of Chicago MicroEditions write:

**The University of Chicago Press**  
126 Buckingham Palace Road  
London SW1

\* Taken from "Microdoc", Vol. 14, No. 8, 1978;  
typelaf of comments on projects handled by



Newspaper Archive Developments Limited is owned by Times Newspapers Limited.

It is still too early for the importance of the relationship between the paper and the text, but they are certainly not the bibliography of medicine that is very much appreciated by the paper equivalent would have been.

The author is press officer of N

**22,000  
into one  
will go**

**Norma Robertson**

The Institute of United States Studies, part of London University, began producing their bibliography of American Studies books on computer output microfilm at the beginning of this year. Despite many teething troubles they have already produced a complete bibliography for 1974 consisting of 22,000 books, and are up to date on the monthly 1975 issues.

The Institute will follow a similar route to produce the monthly physics bibliography.

**OUR PRICE \$69.95 inc. V.A.T., Post, Packing, Insurance**

Supplied complete with adapter, clamping, carrying case and comprehensive instruction manual. Cash with order, or official order or cheque. Access accepted.

**W.V.S. Access request must show home address for authorization purposes.**

**Delivered: Educational Price List on request.**

If you are not sure which relay suits your best ring, Peter K. Bennett, Willan and pick the one. Ask about our exhibition set.

**Farley-Wilson Systems Ltd.,**  
Speedily supplies of electronic equipment.

**Orchfield House, Station Road, Salford, West Midlands**  
**ENQ. Tel. Keown 05645**



# Classified Advertisements

Index to Appointments Vacant, Wanted and other classifications

## Appointments vacant

Universities  
Fellowships & Studentships  
Polytechnics  
Technical Colleges  
Colleges and Institutes of  
Technology  
Colleges of Education  
Colleges of Further Education

## Colleges and Departments

of Art  
Administration  
Overseas  
Government  
Industry  
Adult Education  
Librarians  
General Vacancies

## Appointments wanted

Other classifications  
Announcements  
Exhibitions  
For Sale and Wanted  
Courses  
Holidays and Accommodation  
Typing and Duplicating

## Universities



The University of Manitoba

Invites Nominations and Applications  
for the Position of

## PRESIDENT

with effect from July 1, 1976

The University of Manitoba is a publicly supported institution established in 1877. The full-time enrolment in 22 faculties and schools during the 1974-75 Winter Session was approximately 14,000. In addition to the main campus of the University, the faculties of medicine and dentistry are located at the Health Sciences Campus.

The criteria to be used in reviewing applications and nominations are: satisfactory academic background; ability to effectively and openly communicate with the various publics of the University; a record of administrative competence; strong leadership qualities.

Written applications or nominations will be received in confidence until December 15, 1975, and should be accompanied by a resume of qualifications and addressed to: *Chairman, Advisory Committee for the Selection of a President, The University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.*

Applications are invited for two posts:

## "WISSENSCHAFTLICHER RAT UND PROFESSOR"

which will be anticipated will become vacant in the ENGLISH DEPARTMENT, UNIVERSITY OF TUBINGEN, GERMANY, as of April 1st, 1976. Salary: H2 20,000-24,000 DM. H3 24,000-28,000 DM. H4 28,000-32,000 DM. H5 32,000-36,000 DM. H6 36,000-40,000 DM. H7 40,000-44,000 DM. H8 44,000-48,000 DM. H9 48,000-52,000 DM. H10 52,000-56,000 DM. H11 56,000-60,000 DM. H12 60,000-64,000 DM. H13 64,000-68,000 DM. H14 68,000-72,000 DM. H15 72,000-76,000 DM. H16 76,000-80,000 DM. H17 80,000-84,000 DM. H18 84,000-88,000 DM. H19 88,000-92,000 DM. H20 92,000-96,000 DM. H21 96,000-100,000 DM. H22 100,000-104,000 DM. H23 104,000-108,000 DM. H24 108,000-112,000 DM. H25 112,000-116,000 DM. H26 116,000-120,000 DM. H27 120,000-124,000 DM. H28 124,000-128,000 DM. H29 128,000-132,000 DM. H30 132,000-136,000 DM. H31 136,000-140,000 DM. H32 140,000-144,000 DM. H33 144,000-148,000 DM. H34 148,000-152,000 DM. H35 152,000-156,000 DM. H36 156,000-160,000 DM. H37 160,000-164,000 DM. H38 164,000-168,000 DM. H39 168,000-172,000 DM. H40 172,000-176,000 DM. H41 176,000-180,000 DM. H42 180,000-184,000 DM. H43 184,000-188,000 DM. H44 188,000-192,000 DM. H45 192,000-196,000 DM. H46 196,000-200,000 DM. H47 200,000-204,000 DM. H48 204,000-208,000 DM. H49 208,000-212,000 DM. H50 212,000-216,000 DM. H51 216,000-220,000 DM. H52 220,000-224,000 DM. H53 224,000-228,000 DM. H54 228,000-232,000 DM. H55 232,000-236,000 DM. H56 236,000-240,000 DM. H57 240,000-244,000 DM. H58 244,000-248,000 DM. H59 248,000-252,000 DM. H60 252,000-256,000 DM. H61 256,000-260,000 DM. H62 260,000-264,000 DM. H63 264,000-268,000 DM. H64 268,000-272,000 DM. H65 272,000-276,000 DM. H66 276,000-280,000 DM. H67 280,000-284,000 DM. H68 284,000-288,000 DM. H69 288,000-292,000 DM. H70 292,000-296,000 DM. H71 296,000-300,000 DM. H72 300,000-304,000 DM. H73 304,000-308,000 DM. H74 308,000-312,000 DM. H75 312,000-316,000 DM. H76 316,000-320,000 DM. H77 320,000-324,000 DM. H78 324,000-328,000 DM. H79 328,000-332,000 DM. H80 332,000-336,000 DM. H81 336,000-340,000 DM. H82 340,000-344,000 DM. H83 344,000-348,000 DM. H84 348,000-352,000 DM. H85 352,000-356,000 DM. H86 356,000-360,000 DM. H87 360,000-364,000 DM. H88 364,000-368,000 DM. H89 368,000-372,000 DM. H90 372,000-376,000 DM. H91 376,000-380,000 DM. H92 380,000-384,000 DM. H93 384,000-388,000 DM. H94 388,000-392,000 DM. H95 392,000-396,000 DM. H96 396,000-400,000 DM. H97 400,000-404,000 DM. H98 404,000-408,000 DM. H99 408,000-412,000 DM. H100 412,000-416,000 DM. H101 416,000-420,000 DM. H102 420,000-424,000 DM. H103 424,000-428,000 DM. H104 428,000-432,000 DM. H105 432,000-436,000 DM. H106 436,000-440,000 DM. H107 440,000-444,000 DM. H108 444,000-448,000 DM. H109 448,000-452,000 DM. H110 452,000-456,000 DM. H111 456,000-460,000 DM. H112 460,000-464,000 DM. H113 464,000-468,000 DM. H114 468,000-472,000 DM. H115 472,000-476,000 DM. H116 476,000-480,000 DM. H117 480,000-484,000 DM. H118 484,000-488,000 DM. H119 488,000-492,000 DM. H120 492,000-496,000 DM. H121 496,000-500,000 DM. H122 500,000-504,000 DM. H123 504,000-508,000 DM. H124 508,000-512,000 DM. H125 512,000-516,000 DM. H126 516,000-520,000 DM. H127 520,000-524,000 DM. H128 524,000-528,000 DM. H129 528,000-532,000 DM. H130 532,000-536,000 DM. H131 536,000-540,000 DM. H132 540,000-544,000 DM. H133 544,000-548,000 DM. H134 548,000-552,000 DM. H135 552,000-556,000 DM. H136 556,000-560,000 DM. H137 560,000-564,000 DM. H138 564,000-568,000 DM. H139 568,000-572,000 DM. H140 572,000-576,000 DM. H141 576,000-580,000 DM. H142 580,000-584,000 DM. H143 584,000-588,000 DM. H144 588,000-592,000 DM. H145 592,000-596,000 DM. H146 596,000-600,000 DM. H147 600,000-604,000 DM. H148 604,000-608,000 DM. H149 608,000-612,000 DM. H150 612,000-616,000 DM. H151 616,000-620,000 DM. H152 620,000-624,000 DM. H153 624,000-628,000 DM. H154 628,000-632,000 DM. H155 632,000-636,000 DM. H156 636,000-640,000 DM. H157 640,000-644,000 DM. H158 644,000-648,000 DM. H159 648,000-652,000 DM. H160 652,000-656,000 DM. H161 656,000-660,000 DM. H162 660,000-664,000 DM. H163 664,000-668,000 DM. H164 668,000-672,000 DM. H165 672,000-676,000 DM. H166 676,000-680,000 DM. H167 680,000-684,000 DM. H168 684,000-688,000 DM. H169 688,000-692,000 DM. H170 692,000-696,000 DM. H171 696,000-700,000 DM. H172 700,000-704,000 DM. H173 704,000-708,000 DM. H174 708,000-712,000 DM. H175 712,000-716,000 DM. H176 716,000-720,000 DM. H177 720,000-724,000 DM. H178 724,000-728,000 DM. H179 728,000-732,000 DM. H180 732,000-736,000 DM. H181 736,000-740,000 DM. H182 740,000-744,000 DM. H183 744,000-748,000 DM. H184 748,000-752,000 DM. H185 752,000-756,000 DM. H186 756,000-760,000 DM. H187 760,000-764,000 DM. H188 764,000-768,000 DM. H189 768,000-772,000 DM. H190 772,000-776,000 DM. H191 776,000-780,000 DM. H192 780,000-784,000 DM. H193 784,000-788,000 DM. H194 788,000-792,000 DM. H195 792,000-796,000 DM. H196 796,000-800,000 DM. H197 800,000-804,000 DM. H198 804,000-808,000 DM. H199 808,000-812,000 DM. H200 812,000-816,000 DM. H201 816,000-820,000 DM. H202 820,000-824,000 DM. H203 824,000-828,000 DM. H204 828,000-832,000 DM. H205 832,000-836,000 DM. H206 836,000-840,000 DM. H207 840,000-844,000 DM. H208 844,000-848,000 DM. H209 848,000-852,000 DM. H210 852,000-856,000 DM. H211 856,000-860,000 DM. H212 860,000-864,000 DM. H213 864,000-868,000 DM. H214 868,000-872,000 DM. H215 872,000-876,000 DM. H216 876,000-880,000 DM. H217 880,000-884,000 DM. H218 884,000-888,000 DM. H219 888,000-892,000 DM. H220 892,000-896,000 DM. H221 896,000-900,000 DM. H222 900,000-904,000 DM. H223 904,000-908,000 DM. H224 908,000-912,000 DM. H225 912,000-916,000 DM. H226 916,000-920,000 DM. H227 920,000-924,000 DM. H228 924,000-928,000 DM. H229 928,000-932,000 DM. H230 932,000-936,000 DM. H231 936,000-940,000 DM. H232 940,000-944,000 DM. H233 944,000-948,000 DM. H234 948,000-952,000 DM. H235 952,000-956,000 DM. H236 956,000-960,000 DM. H237 960,000-964,000 DM. H238 964,000-968,000 DM. H239 968,000-972,000 DM. H240 972,000-976,000 DM. H241 976,000-980,000 DM. H242 980,000-984,000 DM. H243 984,000-988,000 DM. H244 988,000-992,000 DM. H245 992,000-996,000 DM. H246 996,000-1000,000 DM. H247 1000,000-1004,000 DM. H248 1004,000-1008,000 DM. H249 1008,000-1012,000 DM. H250 1012,000-1016,000 DM. H251 1016,000-1020,000 DM. H252 1020,000-1024,000 DM. H253 1024,000-1028,000 DM. H254 1028,000-1032,000 DM. H255 1032,000-1036,000 DM. H256 1036,000-1040,000 DM. H257 1040,000-1044,000 DM. H258 1044,000-1048,000 DM. H259 1048,000-1052,000 DM. H260 1052,000-1056,000 DM. H261 1056,000-1060,000 DM. H262 1060,000-1064,000 DM. H263 1064,000-1068,000 DM. H264 1068,000-1072,000 DM. H265 1072,000-1076,000 DM. H266 1076,000-1080,000 DM. H267 1080,000-1084,000 DM. H268 1084,000-1088,000 DM. H269 1088,000-1092,000 DM. H270 1092,000-1096,000 DM. H271 1096,000-1100,000 DM. H272 1100,000-1104,000 DM. H273 1104,000-1108,000 DM. H274 1108,000-1112,000 DM. H275 1112,000-1116,000 DM. H276 1116,000-1120,000 DM. H277 1120,000-1124,000 DM. H278 1124,000-1128,000 DM. H279 1128,000-1132,000 DM. H280 1132,000-1136,000 DM. H281 1136,000-1140,000 DM. H282 1140,000-1144,000 DM. H283 1144,000-1148,000 DM. H284 1148,000-1152,000 DM. H285 1152,000-1156,000 DM. H286 1156,000-1160,000 DM. H287 1160,000-1164,000 DM. H288 1164,000-1168,000 DM. H289 1168,000-1172,000 DM. H290 1172,000-1176,000 DM. H291 1176,000-1180,000 DM. H292 1180,000-1184,000 DM. H293 1184,000-1188,000 DM. H294 1188,000-1192,000 DM. H295 1192,000-1196,000 DM. H296 1196,000-1200,000 DM. H297 1200,000-1204,000 DM. H298 1204,000-1208,000 DM. H299 1208,000-1212,000 DM. H300 1212,000-1216,000 DM. H301 1216,000-1220,000 DM. H302 1220,000-1224,000 DM. H303 1224,000-1228,000 DM. H304 1228,000-1232,000 DM. H305 1232,000-1236,000 DM. H306 1236,000-1240,000 DM. H307 1240,000-1244,000 DM. H308 1244,000-1248,000 DM. H309 1248,000-1252,000 DM. H310 1252,000-1256,000 DM. H311 1256,000-1260,000 DM. H312 1260,000-1264,000 DM. H313 1264,000-1268,000 DM. H314 1268,000-1272,000 DM. H315 1272,000-1276,000 DM. H316 1276,000-1280,000 DM. H317 1280,000-1284,000 DM. H318 1284,000-1288,000 DM. H319 1288,000-1292,000 DM. H320 1292,000-1296,000 DM. H321 1296,000-1300,000 DM. H322 1300,000-1304,000 DM. H323 1304,000-1308,000 DM. H324 1308,000-1312,000 DM. H325 1312,000-1316,000 DM. H326 1316,000-1320,000 DM. H327 1320,000-1324,000 DM. H328 1324,000-1328,000 DM. H329 1328,000-1332,000 DM. H330 1332,000-1336,000 DM. H331 1336,000-1340,000 DM. H332 1340,000-1344,000 DM. H333 1344,000-1348,000 DM. H334 1348,000-1352,000 DM. H335 1352,000-1356,000 DM. H336 1356,000-1360,000 DM. H337 1360,000-1364,000 DM. H338 1364,000-1368,000 DM. H339 1368,000-1372,000 DM. H340 1372,000-1376,000 DM. H341 1376,000-1380,000 DM. H342 1380,000-1384,000 DM. H343 1384,000-1388,000 DM. H344 1388,000-1392,000 DM. H345 1392,000-1396,000 DM. H346 1396,000-1400,000 DM. H347 1400,000-1404,000 DM. H348 1404,000-1408,000 DM. H349 1408,000-1412,000 DM. H350 1412,000-1416,000 DM. H351 1416,000-1420,000 DM. H352 1420,000-1424,000 DM. H353 1424,000-1428,000 DM. H354 1428,000-1432,000 DM. H355 1432,000-1436,000 DM. H356 1436,000-1440,000 DM. H357 1440,000-1444,000 DM. H358 1444,000-1448,000 DM. H359 1448,000-1452,000 DM. H360 1452,000-1456,000 DM. H361 1456,000-1460,000 DM. H362 1460,000-1464,000 DM. H363 1464,000-1468,000 DM. H364 1468,000-1472,000 DM. H365 1472,000-1476,000 DM. H366 1476,000-1480,000 DM. H367 1480,000-1484,000 DM. H368 1484,000-1488,000 DM. H369 1488,000-1492,000 DM. H370 1492,000-1496,000 DM. H371 1496,000-1500,000 DM. H372 1500,000-1504,000 DM. H373 1504,000-1508,000 DM. H374 1508,000-1512,000 DM. H375 1512,000-1516,000 DM. H376 1516,000-1520,000 DM. H377 1520,000-1524,000 DM. H378 1524,000-1528,000 DM. H379 1528,000-1532,000 DM. H380 1532,000-1536,000 DM. H381 1536,000-1540,000 DM. H382 1540,000-1544,000 DM. H383 1544,000-1548,000 DM. H384 1548,000-1552,000 DM. H385 1552,000-1556,000 DM. H386 1556,000-1560,000 DM. H387 1560,000-1564,000 DM. H388 1564,000-1568,000 DM. H389 1568,000-1572,000 DM. H390 1572,000-1576,000 DM. H391 1576,000-1580,000 DM. H392 1580,000-1584,000 DM. H393 1584,000-1588,000 DM. H394 1588,000-1592,000 DM. H395 1592,000-1596,000 DM. H396 1596,000-1600,000 DM. H397 1600,000-1604,000 DM. H398 1604,000-1608,000 DM. H399 1608,000-1612,000 DM. H400 1612,000-1616,000 DM. H401 1616,000-1620,000 DM. H402 1620,000-1624,000 DM. H403 1624,000-1628,000 DM. H404 1628,000-1632,000 DM. H405 1632,000-1636,000 DM. H406 1636,000-1640,000 DM. H407 1640,000-1644,000 DM. H408 1644,000-1648,000 DM. H409 1648,000-1652,000 DM. H410 1652,000-1656,000 DM. H411 1656,000-1660,000 DM. H412 1660,000-1664,000 DM. H413 1664,000-1668,000 DM. H414 1668,000-1672,000 DM. H415 1672,000-1676,000 DM. H416 1676,000-1680,000 DM. H417 1680,000-1684,000 DM. H418 1684,000-1688,000 DM. H419 1688,000-1692,000 DM. H420 1692,000-1696,000 DM. H421 1696,000-1700,000 DM. H422 1700,000-1704,000 DM. H423 1704,000-1708,000 DM. H424 1708,000-1712,000 DM. H425 1712,000-1716,000 DM. H426 1716,000-1720,000 DM. H427 1720,000-1724,000 DM. H428 1724,000-1728,000 DM. H429 1728,000-1732,000 DM. H430 1732,000-1736,000 DM. H431 1736,000-1740,000 DM. H432 1740,000-1744,000 DM. H433 1744,000-1748,000 DM. H434 1748,000-1752,000 DM. H435 1752,000-1756,000 DM. H436 1756,000-1760,000 DM. H437 1760,000-1764,000 DM. H438 1764,000-1768,000 DM. H439 1768,000-1772,000 DM. H440 1772,000-1776,000 DM. H441 1776,000-1780,000 DM. H442 1780,000-1784,000 DM. H443 1784,000-1788,000 DM. H444 1788,000-1792,000 DM. H445 1792,000-1796,000 DM. H446 1796,000-1800,000 DM. H447 1800,000-1804,000 DM. H448 1804,000-1808,000 DM. H449 1808,000-1812,000 DM. H450 1812,000-1816,000 DM. H451 1816,000-1820,000 DM. H452 1820,000-1824,000 DM. H453 1824,000-1828,000 DM. H454 1828,000-1832,000 DM. H455 1832,000-1836,000 DM. H456 1836,000-1840,000 DM. H457 1840,000-1844,000 DM. H458 1844,000-1848,000 DM. H459 1848,000-1852,000 DM. H460 1852,000-1856,000 DM. H461 1856,000-1860,000 DM. H462 1860,000-1864,000 DM. H463 1864,000-1868,000 DM. H464 1868,000-1872,000 DM. H465 1872,000-1876,000 DM. H466 1876,000-1880,000 DM. H467 1880,000-1884,000 DM. H468 1884,000-1888,000 DM. H469 1888,000-1892,000 DM. H470 1892,000-1896,000 DM. H471 1896,000-1900,000 DM. H472 1900,000-1904,000 DM. H473 1904,000-1908,000 DM. H474 1908,000-1912,000 DM. H475 1912,000-1916,000 DM. H476 1916,000-1920,000 DM. H477 1920,000-1924,000 DM. H478 1924,000-1928,000 DM. H479 1928,000-1932,000 DM. H480 1932,000-1936,000 DM. H481 1936,000-1940,000 DM. H482 1940,000-1944,000 DM. H483 1944,000-1948,000 DM. H484 1948,000-1952,000 DM. H485 1952,000-1956,000 DM. H486 1956,000-1960,000 DM. H487 1960,000-1964,000 DM. H488 1964,000-1968,000 DM. H489 1968,000-1972,000 DM. H490 1972,000-1976,000 DM. H491 1976,000-1980,000 DM. H492 1980,000-1984,000 DM. H493 198



